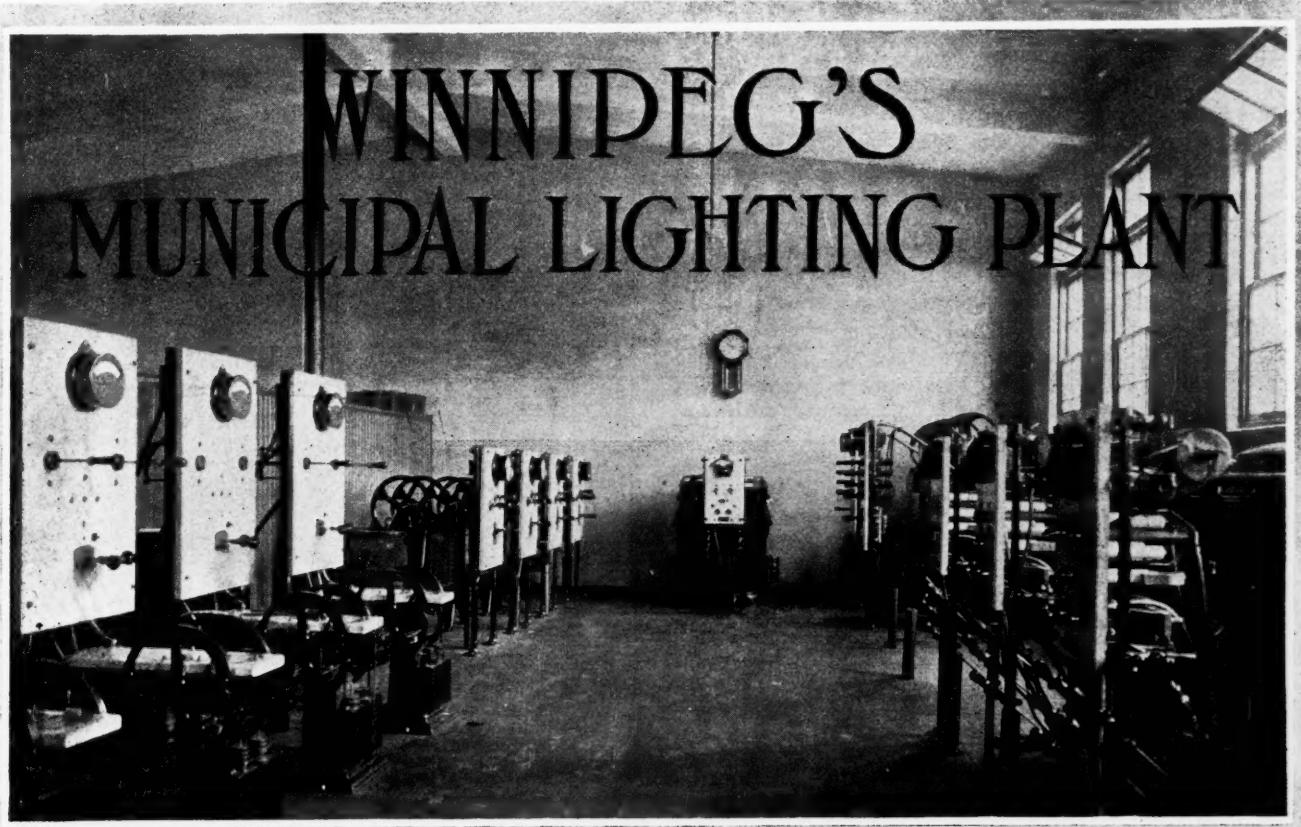


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TRANSFORMER ROOM, SHOWING PART OF REGULATORS

By D. J. BENHAM

THE city of Winnipeg, Man., Can., young though it is, can boast of the most modern and efficient municipal lighting plant in Canada; though, unfortunately for the finances of the city and the interests of the ratepayers, it has to be used exclusively for street lighting, because before the strong sentiment in favor of public ownership of public utilities which now pervades the democracy of the West had been developed to its present status, forcing government ownership of the telephone system, a railroad system and even the chains of interior grain elevators, the franchise for commercial lighting had been granted to the electric street railway and gas company. This fact has been a constant source of friction between the city and the company for some years, and annually is fought out on the floors of the legislature. Hitherto the company has resisted successfully all attempts to secure legislation to permit of the city entering on any department of the commercial lighting business and has effectually lobbied against it in the house.

The fight is about to be renewed with great vigor, however; the decision of the city to erect a great hydraulic power plant on the Winnipeg river about sixty miles away as a guarantee of cheap energy to manufacturers whom it is desired to attract here, having given a new phase to the situation. The rate-

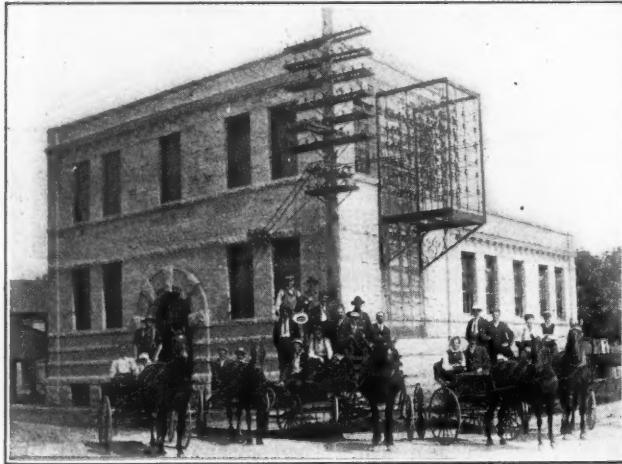
payers expect to invest upwards of five millions there and will have sufficient surplus for many years to light the house of every ratepayer in the city, and they are determined that the right shall not be denied them. The company is deeply alarmed by the developments and, as an inducement to the council to hold up the erection of this plant or at least defer it, has offered to make a substantial reduction in the cost of lighting or to permit the city to fix the charge by a board of competent arbitrators. Hitherto they have taken the ground that it was none of the city's official business what the charge for commercial lighting was. The city now holds the whip hand and can exact terms, as is evidenced by the fact that the accredited representatives of the president of the company conducted negotiations for the sale of the entire undertakings and franchises of the company to the city, including their gas plant. He asked sixteen and a half million dollars as the price, five million of which is estimated as the cost of the company's hydraulic power plant and transmission system. The city is willing to arbitrate on the price and it is not improbable that civic purchase of the company's plants will solve the whole problem and restore to the people the franchises they should never have disposed of.

It is eight years since the city installed its first street lighting plant. It was operated in conjunction with the water works,

the one steam plant being utilized for both. It was a decidedly modest undertaking, the plant consisting of a 350-h.p., cross-compound Brown engine and a 100-h.p. Leonard-Ball engine. Three Western Electric Company's direct-connected arc dynamos furnished current for street lighting, and a 60-kilowatt, "S. K. C.," two-phase, 2400-volt, alternating-current generator supplied current for lighting the civic buildings. This plant supplied a system of about 220 street arc lamps of the "open arc" series type for the first three years of its existence, after which a circuit of enclosed arc lamps of the series alternating-current type was installed.

The whole street lighting industry was passing through a period of evolution about that time, many different systems finding their votaries, but with cheap long-distance power transmission bearing strongly in favor of the alternating-current lamps. The first of this type were installed in February, 1904, and proved so satisfactory that all extensions were of the same type until at the present time they are in use throughout the city. However, modern invention has placed them where they are no longer regarded as the best available and the electrician is now experimenting with the "Luminous" lamps. If these prove as satisfactory as he has reason to believe, they will be adopted as the standard street lamp of Winnipeg and will be installed throughout the entire system.

Generation of power by steam was abandoned a little over a year ago when the completion of the street railway company's hydraulic plant at Lac du Bonnet, 60 miles away, greatly cheapened the cost of energy. The company entered into a contract to supply the city with power for the lighting plant at a price which made it decidedly unprofitable to continue the operation of the steam plant longer. This contract called for the delivery of power at a point on the opposite side of the city from where the old station had been located, and as the requirements of the extension of population had quite outgrown the accommodation there anyway, a new building was

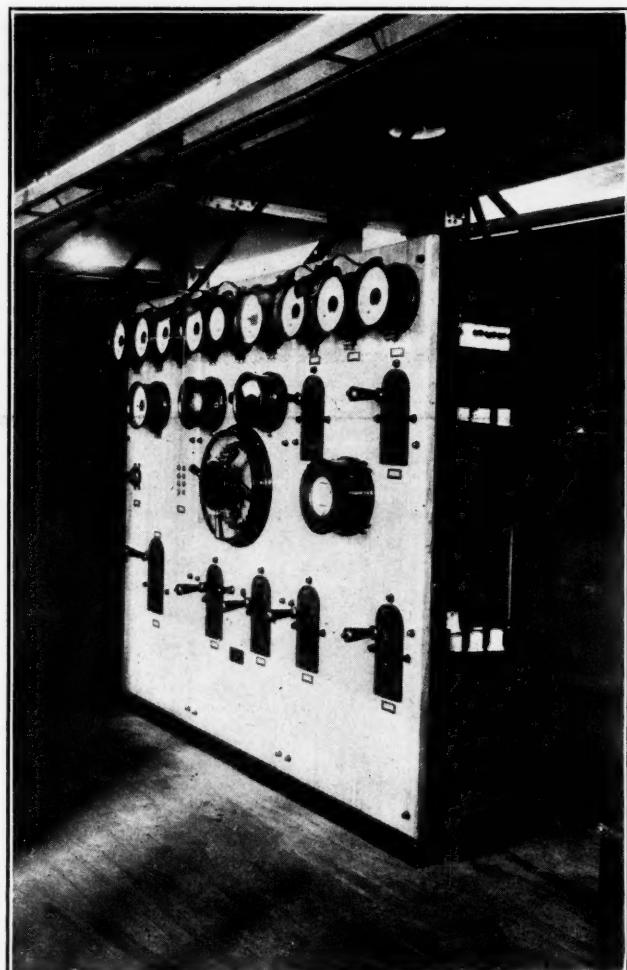


WINNIPEG SUB-STATION

erected. This is known as electrical sub-station No. 1, and is 50 x 66 feet with a two-story section in front 50 x 25 feet. It was designed to accommodate a plant capable of handling 2,000 arc lamps with all the necessary transformers, regulators, distributing switchboards and similar appliances. At present only half the plant is utilized, the balance being reserved for future developments. The building is of solid brick and concrete, with concrete floors and ceilings, making it absolutely fireproof, wood being used only where it acts as an insulator for the safety of employees working among the high-tension currents.

The current is received there from the street railway company's transmission lines at 2200 volts, and is metered on the kilowatt-hour basis. The first panel contains three ampere meters, voltmeter and a polyphase integrating wattmeter, also a double-throw automatic oil switch.

Panel No. 2 contains a polyphase ground detector, voltmeter connected with the incandescent primary circuit which supplies



INCOMING POWER PANEL AND OUTGOING PANELS TO INCANDESCENT AND ARC REGULATOR FEEDERS

the civic buildings, and ampere meter for the same; and a single-phase integrating wattmeter. There is also a ground detector used for locating leakages of current on any of the city's primary lines. There is also a "Stilwell" single-phase step-by-step regulator for keeping a steady voltage to the lights. By the use of this delicate and finely adjusted instrument, through the simple turn of a wheel, the incandescent lamps are lighted with a voltage which gives them their best and most economical efficiency. The benefits of some such device are well illustrated by the fact that while the voltage on the incandescent circuits of the street railway company fluctuate from 110 to 130 (in contravention of the law, which permits a variation of only four volts), the civic circuits never vary beyond the regulation four points. The excessive current in the company's wires at present is a subject of municipal investigation. Two automatic oil switches control the circuits on panel No. 2, and at the back of the board is the transformer for the Stilwell machine. One switch puts the current through a transformer which, in case of a ground on the line, isolates the city system from that of the company.

Panel No. 3 is the totalizing panel for the lighting feeders and contains four automatic oil switches, a polyphase integrating wattmeter and three ampere meters.

Panel No. 4 controls the power line running out to the city's artesian well. It contains a double-throw automatic oil switch, three ampere meters, a polyphase power-factor meter and a polyphase integrating wattmeter.

The second board, 7 x 14 feet, is the outgoing arc board. Its five panels are for the control of the twenty arc lighting circuits at present installed, and for test work on those circuits. It is remarkable chiefly for its flexibility, many new and interesting features having been introduced for the safe and rapid operation of the lighting systems. By the use of flexible cords and plugs the circuits can be plugged across to any regulator without

delay. On the board there is also a set of special indicators. They are in the form of twenty-candle-power pilot lights—one to each circuit. They have opaque shades with an aperture carrying the number of the circuit, enabling the operator to tell at a glance how the different circuits are running. The test panel of this board contains a high-tension voltmeter with double scale, used to show the number of lamps burning on each circuit and also to locate grounds on the line; a direct-current voltmeter for testing the insulation of the lines; a standard ampere meter for checking the individual ammeters on the regulating panels, and a recording ampere meter. Direct current is used for day testing, and is furnished by a Holtzer-Cabot motor generator set.

The entire switchboard equipment was built by the Canadian Westinghouse Company from designs prepared by City Electrician Chamberlain.

Lightning arresters of the latest design are placed in a gallery above the switchboards. From them the power cables are run through special fireproof ducts and cables to the wire tower outside. This wire tower is also of special design, being in the shape of a large bracket and framework of steel fastened to the outside of the building. All insulators are of specially high quality, having a guaranteed working pressure of 6,000 volts.

In transformer room No. 1 are the transformers for the twenty circuits now installed. Three of these are double-circuit regulators capable of handling 100 lights each, while the others accommodate but 50 lights each. Marble panels located in front of the regulators carry the switches and ampere meters for the individual control of the regulators. The floor of this room is surfaced with maple, bedded in pitch on concrete, giving good insulation and fireproofing combined.

In addition to these departments there is room on the ground floor for duplicate sets of all the equipments described, while on the upper floor there is a lamp repairing and testing room, with adjusting appliances and meters. In a storeroom is carried a stock of wire and all emergency supplies. In the basement are the oil-filled transformers, lavatories and heating apparatus.

Connected with the building is a large lot and warehouse for storage purposes; also the stables for the horses.

A staff of thirty-one men is employed, including those needed for the fire-alarm system, which has recently been combined with the lighting department. To this will be added the patrol system calls as quickly as the service can be installed.

#### INFORMATION FOR TAXPAYERS

We have received a small book of 17 pages issued to the taxpayers of Waterbury, Conn., by Collector of Taxes Francis T. Reeves, which shows a most commendable desire on the part of that official to give the taxpayers all the information which they might be likely to desire concerning taxes. It deals with the subjects of listing taxable property, the duties of assessors and the rights and duties of the taxpayer in connection with assessments; the functions of the Board of Equalization and Relief; the general routine of assessors, boards and collectors in fixing and collecting the taxes, etc. It also gives information concerning other matters, such as the desirability of asking for tax receipts when purchasing property; the various conditions conferring exemption from taxes; a full statement of water rates, of sewer assessments and of other assessments for paving, sidewalks, sprinkling, etc. It also informs the taxpayer how, when and where he can make complaints concerning taxes, water rents and assessments. It gives four pages of figures showing the value of taxable property in the city; the various city expenditures which are met by the taxes; and finally, the annual report of the collector giving in detail the various taxes collected during 1908. Altogether, this little book, 2½ by 5 inches in dimensions, should be of interest to every taxpayer of the city, and we commend the idea to Collectors of Taxes and other municipal officials in cities generally throughout the country.

#### MAIN TRAPS ON SEWER CONNECTIONS

##### Arguments For and Against Their Use—Bacteria in Sewage Air—Ventilation of House Connections Desirable— Perforated Manhole Covers

In a paper read before the Boston Society of Civil Engineers, Mr. J. Pickering Putnam recently discussed several details of house plumbing practice, but that which was most freely discussed was the main trap on sewer connections. Concerning this he said:

My conclusions from my own experiments and those of eminent investigators like Carmichael, Miquel, Frankland, Naegeli, Carnelley and Haldane, Laws and Andrews, Alessi, Pumpelli and Smyth, Major Horrocks, and, latest of all, Prof. C.-E. A. Winslow, of Massachusetts, may be summarized as follows:

(1) A sound water seal affords a reliable barrier against the entrance of sewer air and all kinds of germs.

(2) Dust and germs falling into water or against the wet surfaces of sewers and drain pipes are, under normal conditions in the drains, arrested and prevented from rising again into the air so long as the surfaces remain wet.

(3) Abnormal conditions prevail in drains when splashing or bubbling occurs in the sewage, under the influence of which fine droplets may be projected into the surrounding air. If these droplets contain germs and are minute enough to be wafted in the air currents passing through the pipes the germs therein may remain in the air until they again fall against the wet surfaces. Even germs have a definite weight, and the speed of their descent under the influence of gravity has been calculated, and these calculations give also the speed of an air current necessary to support or move them.

(4) It is possible that small particles of sewage which have dried against the upper parts of the walls of the sewers may be detached therefrom by air currents and in this manner allow of the escape of germs into the sewer air. The probability of this action is denied by some investigators but affirmed by others. It may be admitted as a possibility.

(5) Disease germs seem to be unable to survive long in sewage, the non-pathogenic germs therein far outnumbering them and destroying them by their products.

(6) Fewer germs are found in the air of sewers than in the outer air above the sewers, and those which are found in the sewer air are dissimilar in kind from those in the sewage, but similar to those in the outer air.

(7) The number of germs present in the air of well-ventilated sewers exceeds that in less well-ventilated sewers and varies with variations in the content of the street air, implying that their origin is from without and not from within the sewer.

(8) The majority of investigators have failed to isolate specific disease germs from the air of sewers, and it may be stated in general terms that they are not to be found there under normal conditions. Yet a few well-known investigators have obtained cultures in the air of sewers of germs apparently coming from the sewage under conditions apparently normal, and it is generally admitted that the splashing, bubbling or drying of the sewage may release them under rare conditions in good practice. *Their numbers in sewer air must, however, in properly constructed sewers, be so small in the whole volume of the sewer air that their effect regarded from a sanitary standpoint may be considered as negligible.*

(9) It is known that disease germs, especially those of consumption, may be disseminated in the air above the sewers, and may, especially in times of epidemic, abound therein in large numbers and unquestionably in larger numbers than in the air of the sewers themselves.

(10) Under such circumstances street air passing through the sewers and house drains becomes filtered by them and emerges from the pipes freer from its dust and germs than when it entered, and must, in fact, before reaching the tops of the stacks above the roof be entirely freed therefrom.

(11) Currents of air rising through the soil pipes in buildings act like smoke in chimney stacks, taking a spiral course as it ascends. In so doing, as well as in passing around bends and angles, every particle of air tends to strike against the inner surfaces of the pipes more or less often before reaching the roof. The result of this phenomenon is that any dust and germs which might enter the house drainage system from the public sewer are bound to be arrested somewhere along the wet surfaces of these pipes and be ultimately destroyed. Hence, with good plumbing, the possibility of the entrance of a disease germ into the house from plumbing pipes becomes practically nil. If there is any danger whatever of contracting disease from the air in the sewer itself so ventilated, all such danger is thus eliminated for residents in the houses connected there-

with. More questionable germs are consumed every twenty-four hours in ordinary food and drink, or inhaled from the outer air, than would probably be obtained from the soil pipe air in a lifetime.

(12) The omission of the main house trap converts every house drain into a sewer vent and insures the destruction of any dust and germs, pathogenic or otherwise, which may under normal or abnormal conditions be found in the sewer. The rate of purification of the air of cities by this method of filtering it through the sewers and house drains is very great, amounting, by my calculations, to over a million and a half cubic feet per minute for every square mile of the city's area, or to the ventilation produced by a ventilating chimney 68 ft. in diameter conducting air at a speed of 419 ft. a minute.

(13) The use of the main house trap obstructs sewer ventilation and results in forcing any pathogenic germs and foul and dangerous odors it may contain into the street through the sewer gratings.

(14) The use of the "back-air" pipe with traps tends to destroy their water seal by evaporation, where unvented anti-siphon traps are capable of retaining their seals under all conditions encountered in plumbing practice, and for many months without refilling.

(15) Drain piping may now be installed in such a manner as to be permanently sound and reliable.

(16) Splashing in sewers may be avoided by a proper construction of the pipe connections with the sewer.

(17) Whatever danger, if any, there may be from the possible presence in rare and isolated cases of disease germs in the air of the sewer itself, that danger may be practically eliminated by ventilating the sewer through the house drains and using sound plumbing and unvented anti-siphon traps. Under such conditions there is indeed a possible danger of contracting disease from dust and germs coming in through open windows, but none from the plumbing system, because the former may and the latter cannot transmit the germs.

(18) The shallower the seal of an anti-siphon trap the better. It not only requires less water to refill it from its reservoir or "fill" chamber after siphonage, but it will then protect the seal of any adjoining water-closet trap as well as itself.

In discussing Mr. Putnam's paper, Mr. Coffey, chief sanitary officer of Worcester, Mass., said, among other things:

I am not here to advocate that the house trap is essential. I recognize the fact that this whole question is, to say the least, in a debatable state, and my mind is open about it. There is much to be said in favor of venting sewers through the soil pipe, and it might be said, of course, that if that was done throughout the entire city the offensiveness of the sewer would be so diminished by the multiplicity of vents that it would be hardly noticeable in any one place. But again that may or may not be true. The currents of air in the sewers themselves and the currents of the outer air may so change the action of the vent pipes that they would not work in one locality when they would work freely in another. There is not any question that the sewers in themselves are highly offensive at times. A case came within my own personal observation within two weeks. At the foot of the street where I live there was a perforated manhole covering midway between the car tracks. At times that wasn't noticeable, but at other times it was highly offensive, so much so, indeed, that I went to the superintendent of sewers less than two weeks ago and told him he ought to change that for a closed cover. He did change it and since then I have not noticed any trouble. But when it was offensive it was highly offensive, and there is not any question that sewer air is highly offensive at times and that currents of air moving in the sewers may have an effect. So that it is an open question whether or not vents all over the city would minimize it to such an extent that in any individual case it would not be noticeable.

Mr. Charles R. Felton, City Engineer of Brockton, advocated the omission of main traps, his remarks being as follows:

While the omission of the house trap referred to seems to be regarded as more or less of a novelty, yet I can say that in Brockton for the last fourteen years no house trap has been installed on any connection with the sewer. We have some 3,000 to 4,000 connections, all of which are minus the house trap. Its omission is compulsory, and I have yet to hear of any complaint by reason of its omission. While the quotation of vital statistics is liable to be misleading, it is a fact that of all the cities for which statistics are given by the Massachusetts State Board of Health, with a population of over 25,000, I think the death-rate in Brockton is the lowest. This may or may not have any bearing on the subject. It is evidence, perhaps, of a negative character, in that it proves that the omission of the house trap is at least not of a very deadly nature. At the time of the installation of the system there was more or less controversy over whether this trap should be omitted, and a report was asked for from Mr. Rudolph Hering on that subject, and at that time he did not treat it as a novelty. He said

the trap was omitted in many places in this country and quite commonly abroad. I have his report here. It is short and perhaps I had better read it in its entirety. This, you understand, was written some fourteen years ago, and possibly his mind may have changed on the subject.\*

[Mr. Hering's Report to the City of Brockton.]

#### VENTILATION THROUGH HOUSE DRAINS

The ventilation of public sewers is important both to enable the air within the same to be kept at atmospheric pressure in order to prevent the traps connected with the system from being unsealed, and to cause an exchange of air within the sewers. The usual method of ventilating public sewers is to have perforated manhole covers and thus allow the ingress or egress of air at every street intersection, or wherever manholes are located.

Private sewers or house drains are usually disconnected from public sewers by traps, and are themselves ventilated by means of fresh air inlets provided for near the ground and generally at the sidewalks, by which the air enters and, after circulating through the house drains, is permitted to escape above the roof through the open soil pipe. There is no serious objection to this method of ventilating both sewers and house drains. A better way, in my opinion, because it is more effective, is to ventilate the public sewers through the house drains. When the other method is employed we generally find the fresh air inlets closed with dirt, or, in the winter, with snow and ice. The objection claimed for ventilating the public sewers through house drains is the supposed danger of getting sewer air into the house, if any pipe in the latter is not right. In my opinion the danger is more imaginary than real. The air contained in the pipes will escape at the larger opening above the roof, provided the pipes are properly dimensioned, rather than escape through small cracks in the rooms of the house, even should there be an imperfect joint. The same danger, however, is imminent from the house drains themselves if they are not air tight. The continual passage of air through them from the sewer will give them much more ventilation than if they relied on the so-called fresh-air inlet, and are thus found to be much cleaner. Any possible escape of sewer air from them will, therefore, be less offensive and less dangerous. On the continent of Europe, and particularly in the colder countries, it is considered decidedly preferable to ventilate the public sewers through the house drains. In our own country we have several cases of this kind. No complaints, as far as I know, have ever been made against the actual working of this method of ventilation either in Europe or in our own country.

To reduce the possible dangers to a minimum, and also for other reasons, it is my opinion that house drains should be under municipal control. This requirement seems to me to be even more important than the control of pipes for water and gas supply within the premises, because in the latter any defects at once become apparent. All house drains should be tested as to their air-tight condition after construction, and they should be so laid in the building that they can be readily examined at any time, and they should be so examined regularly at certain intervals.

There is another advantage arising from a good current of air from the public sewer through and out of the soil pipes which is of value in colder countries. The great current of air escaping at the top of these pipes renders them less likely to become choked in winter by frost than if there is but a small current in them, as would be the case if the fresh air inlets are small and partly stopped up.

If you can establish municipal control of your house drains and keep your sewerage well cleaned and flushed, the ventilation both of public and private sewers obtained partly by perforations in manhole covers, acting as inlets, and the soil pipes in houses, acting as outlets, is the best and most thorough system of ventilating sewers.

(Signed) RUDOLPH HERING.

It seems to me that with the trap omitted a perforated manhole cover is more imaginary than real, as Mr. Hering has said. Our inspector of plumbing informs me that he has never heard a complaint by reason of the odor from the pipes communicating to neighboring buildings.

It seems to me that with the trap omitted a perforated manhole cover is entirely unnecessary. It is an objectionable thing for other reasons than the odor, and I have entirely stopped using it. When you have as many openings as you do in a system without traps, it seems to me the holes in the covers are but a small fraction of the total vent area and are unnecessary for ventilation.

Mr. E. S. Dorr, Chief Engineer of the Sewer Division of Boston, said:

All this discussion has been regarding the means of preventing sewer air from getting into the house. Sewer air is foul or not in proportion as the sewer is ventilated. If the sewer could be adequately ventilated there would not be anything deleterious about sewer air whether it got into the main stack or not. There are ways of ventilating the sewer. One is through the house system. The other is through perforated manhole covers. That is the system that has been adopted.

\*Within three months Mr. Hering has written: "The beneficial effect of ample ventilation was never more strongly impressed upon the writer than when he saw the evidence in favor of it for the first time. Mr. E. C. Clarke, M. Am. Soc. C. E., when building some of the first sewers of the main drainage system of Boston, showed two house connection pipes that had been cut off and were to be intercepted by the sewer. One had the usual main trap at the house, and that part of the pipe which was below the trap was coated with a layer of slime and vegetable growth, perhaps one inch thick. The other had no trap, and had been ventilating the old sewer now being displaced. This old house pipe, although conveying practically the same quality and quantity of house sewage, had almost a clean surface due to the constant air current which passed through it, and held the growths down to a minimum."

And that has been found to be a very imperfect system. In the first place, at certain seasons of the year it won't work at all. When those perforations are stopped up with ice and snow, our system of sewers is practically unventilated, and when the sewers are suddenly filled with water, no matter what trap you have, the sewer air will be forced into the houses.

Now, let us consider the relative importance of things. The sewer is the main thing. Isn't it better to adopt a system by which the sewer can be adequately ventilated and the sewer air rendered innocuous at all times than it is to go into all sorts of complications to prevent the air from getting into the houses? I agree with the gentleman from Brockton. If the running traps all over the city were abolished and taken away, then the perforated covers could be done away with and the sewer air would not be thrown out into the streets right under the windows, which is certainly a much greater nuisance than discharging it through the stack pipe.

Continuing the discussion, Mr. E. B. Weston, Consulting Engineer of Boston, said:

It is difficult to understand how one can apply the same rules in the case of a brand new sewerage system, with new houses and new streets, than one would apply in the case of an old city, where the sewers have been built on the combined system; where the sewers have sagged and clogged; contain deposits of decomposing and fermenting matter, giving off gases, and are not adequately ventilated. It is impracticable to lay down any law to cover all these conditions. Each city must establish general principles applicable to its own conditions and leave a good deal to the individual discretion of the city engineers and the plumbers who have to carry out the work.

I have received a letter from Prof. C.-E. A. Winslow, as follows:

"It seems to me that the difficulty with plumbing regulations arises mainly from the fact that plumbing has never been treated as an engineering problem. I do not use the word 'engineer' in a narrow sense. I consider myself an engineer, a biological engineer if you like. On the other hand, I do not use the word 'engineer' as synonymous with any worker in natural science. It seems to me that an engineer is not simply a man who utilizes the forces of nature, but one who attempts to obtain maximum results from such utilization at a minimum cost. That is, the element of cost-efficiency must always enter into the work of a real engineer. Now, applying this generalization to our particular problem, it is possible to obtain varying degrees of protection against sewer gas. We can, for example, insist that every fixture shall be trapped, that is, that there shall not be constant open connection between house drains and sewers and apartments. This is a minimum. At the other extreme we may demand traps on individual fixtures, each protected by a special vent pipe opening to the air above; and we may demand further a disconnecting trap between the house system and the sewer. Undoubtedly the first provision will keep most of the sewer gas out of our houses. Undoubtedly the second type of regulation will keep out more. The original idea, derived, perhaps, from the time when sanitation was a branch of medicine and not a branch of engineering, was that all sewer gas must be kept out of all houses at all times, at all costs. That was perhaps a reasonable position when the danger from sewer gas was supposed to be very great. To-day, however, our views of this menace have materially changed.

"We know that the danger from sewer gas can lie only in two things: either in the transfer of infectious germs or in the presence of poisonous gases, which may gradually lower the vital resistance of the body. The early researches in bacteriology tended to show that the former danger, that is, the danger of transmitting disease germs, was not an important one, since bacteria are not readily detached from moist surfaces and are not present in large numbers in sewer air. It became pretty generally accepted in this country and in Germany that the danger of specific transmission of disease by sewer air was slight. In England, on the other hand, the older view still lingers, and within the last two years it has received important support from experiments carried out by Major W. H. Horrocks at Gibraltar and by Dr. F. W. Andrewes in London. These observers infected the lower traps of a plumbing system by pouring in cultures of specific germs, and afterwards detected the same bacteria in the air of the upper parts of the system at considerable distances above. It happens that for the last two years I have been at work on the question of bacteria in sewer air under the auspices of the National Association of Master Plumbers, and I have arrived at results which, while not contradicting those of Horrocks and Andrewes, throw a very different light on their interpretation. I have found that specific bacteria are indeed discharged into the air from the surface of foaming, soapy liquids, but that the quantitative air pollution brought about is extremely slight. It seemed from my earlier experiments that Horrocks and Andrewes had demonstrated a possibility, but a possibility of such slight numerical importance that it could safely be neglected. In order to test this view I examined 200 samples of air from 19 different

plumbing systems in various buildings in Boston. Of the 200 samples of air taken from the inside of house drains, soil pipes, vent pipes and wastes, only 4 showed sewage bacteria, and those 4 were samples taken in the immediate presence and at the moment of local splashing. The air of the house drainage systems in all the other samples was entirely free from sewage bacteria and I calculated that if a person applied his mouth to the upper part of a house drainage pipe and breathed the air for twenty-four hours he would inhale fewer intestinal bacteria than he would ingest in drinking a quart of New York water.

"The practical conclusion from these experiments is, of course, that the danger of contracting specific disease from sewer air is slight. There remains, of course, the possibility that sewer air may predispose to certain epidemic diseases by a general lowering of the vital resistance. Whether this is true or not we cannot at present say. The subject well deserves careful investigation, and I hope to make some study of it during the coming year. At present, the evidence that this phenomenon plays an important part in epidemiology is of a somewhat uncertain nature.

"In view of these facts it seems clear that while we are right in spending money for plumbing which is free from gross defects, we are not as obviously justified in recommending large expenditures for refinements like back ventilation systems and intercepting traps between the house and the sewer. The trapping of ordinary fixtures does away with most of the possible danger from sewer gas. There are plenty of traps which will give a reasonable degree of security against siphonage without back ventilation. I believe the money now spent by the community and by the householder in securing double and triple safeguards against the possibility of defective traps could be much better devoted to improvement of the milk supply or to some other phase of the campaign for public health, which we can actually prove to be of practical importance."

### STREET CAR ANNUNCIATOR

A CORRESPONDENT from Chemnitz, Mr. Robert Wagner, commenting upon the street car annunciator described in our June 9th issue, states that he does not believe this style of annunciator would be entirely satisfactory because, even when speaking in a natural way, many conductors do not pronounce the names of the streets plainly. In 1904 he found this to be true of the conductors both in New York and St. Louis; and it is not foreigners alone who find difficulty in understanding the calls of street car conductors.

He recommends, instead of this, a method employed in Germany which consists of a box placed at the end of the car and having a glass in front behind which appears the name of the next street. A roll of canvas or similar material carries the names of the streets in their order, causing them to appear in succession behind the glass front. After passing each street the conductor causes the name of the succeeding street to appear behind the glass. There is no question but that this is much the better plan; both for the reasons stated, and also because there are more deaf people traveling than blind ones, and because the name is continually there and a passenger need not keep his attention constantly fixed in order to ascertain the approach of the required street. We believe this method has been used in a few cars in this country, and it seems to be a reform worthy of general adoption.

### LOUISVILLE WATER PURIFICATION PLANT

Mr. T. A. Leisen, Chief Engineer and Superintendent of the Louisville Water Company, has requested us to state, in connection with the water purification plant described by us in the June 2d issue, that Mr. Webster Gazlay (misspelled Gaylay through a misreading of the manuscript), Associate Engineer, was, prior to Mr. Leisen's taking charge of this work and also since his appointment, directly in charge of the filter work, and that it has been due entirely to his efforts that the work of alterations and remodeling the old filter have been carried to a successful completion. Mr. Leisen makes this request because he fears that the statement on page 994 might lead readers to suppose that he was endeavoring to take to himself credit which properly belongs to Mr. Gazlay. We are glad to assist Mr. Leisen in placing the credit for this work where it belongs.

## CINCINNATI WATER DEPARTMENT NOTES

## Hydraulic Survey and Valve Examination Parties—Work Done by Each—New Methods of Installing Meters—Cost of Pipe Cleaning

IN the report of the Superintendent of Distribution of the Cincinnati, O., Water Department, Mr. J. A. Hiller, for the year 1908, are described two new departures made during that year, these being the organization of an hydraulic survey party and of a valve examination party. The hydraulic survey party, which was in charge of G. E. Jones, had as its object obtaining the elevations and water pressures in all parts of the distribution system, and noting unusual losses of pressure and the general condition of the mains. This work has progressed favorably during the time that was available. The elevations and pressures have been obtained for a distance of about three hundred feet on each side of the division lines between the various services. The territory bounded on the south by the Ohio River, on the east by Vine street, on the north by Eighth street, Gest street and Harrison avenue, and on the west by the division line between the low and the Price Hill services has been completed. Winton Place, from Spring Grove avenue north to the corporation line, and from Winton road eastward is also completed. About five hundred permanent bench marks have been established for future reference, and also the elevation of and the water pressure at all fire hydrants in the above territory have been taken and recorded. A set of maps on a scale of four hundred feet per inch is being prepared whereon these elevations and pressures are recorded. To date seventy-three of these maps have been prepared, which include about two-thirds of the Distribution System. This survey has already been useful in the changing of the division line in many places.

In addition to the regular work of making the hydraulic survey this party has investigated many complaints of lack of pressure, as well as performing the engineering work necessary in the extension of water mains.

The valve examination was in charge of Messrs. Geo. Heimlein and Jos. Heimbach. The first work done by this party was the examination of all the division valves between the various services to determine whether the same were properly closed. After this was completed an examination of all the valves larger than twelve inches was made; next a systematic examination of all valves was begun, commencing at the river and working northward. All valves in the low service between the river and Court street have been examined. In connection with the examination of the valves, a card record is being kept, whereon is stated the size of the valve, how it was found—whether opened or closed—the direction in which it closes, the number of turns required to close, whether it closes tight or not, the condition of the stuffing-box and valve-box, and a sketch showing the exact location of the valve.

The following table shows the number and size of valves examined:

Size.	Number of valves examined.	Number of valves found in need of repairs.	Number of valves found closed which should have been open.
3	46	3	2
4	1,121	60	22
6	632	57	6
8	137	24	3
10	538	53	10
12	69	12	..
16	47	15	1
18	1	..	..
20	148	33	1
24	40	4	..
30	4	1	..
35	2	2	..
36	22	6	..
40	3	1	..
42	5	..	..
48	6	..	..
60	2	..	..

## SUMMATION

Total number examined.....	2,823
Total number found in need of repairs.....	271
Total number found closed.....	45
Total number of pipes flushed.....	149

During the year a radical change in the method of installing meters was adopted. Formerly the Department purchased meters by contract or otherwise and sold to consumers. The present regulation permits a consumer to purchase any kind of meter, wherever he may choose, the only restriction being that such meter shall be subject to certain tests as to accuracy, and that the Department can demand repairs and renewals when the meter fails to record correctly. Rules were also adopted which required the metering of all new service branches, all premises maintaining watering troughs, and all institutions receiving extra discounts. The present method of installing meters has proven very satisfactory. More meters were installed during 1908 than in any previous year in the history of the Water Department. In addition to the examination of valves this party flushed many of the mains, more particularly dead ends. The quantity of mud removed in this manner from some of the lines was quite large, showing that the pipes had been nearly filled with deposit.

In September of last year the city received a bid for cleaning about 94,000 feet of mains from 6 to 20 inches in diameter, the prices bid ranging from 23 to 36 cents per foot. It was thought that these were excessive and a few weeks later bids were received from two companies for about 28,000 lineal feet of the same sizes of mains. The second bidder in this case bid from 15 to 25 cents per foot, and to it, The Whitney Pipe Cleaning Company, a contract was awarded.

"From the records kept as this work was being done it can be shown that the cleaning of water mains can be done at a reasonable profit at prices considerably less than the contract prices when no pitometer tests are required. The work already done has convinced me that pipe cleaning can be well done and at a reasonable cost, say 10 or 12 cents per lineal foot for 6-inch mains and about 20 cents per foot for 20-inch mains. The royalty basis for the use of the machine would offer some advantages. In many cases when it is necessary to repair water mains they are found to be in need of cleaning. If the Department had on hand, ready for use, a machine of the required size, this main could be cleaned for a distance of from 300 to 500 feet with but one additional opening made in the street."

## MASSACHUSETTS WATER SUPPLY COMPANIES

THE Massachusetts State Legislature has passed an act which was approved April 26th last, giving to the State Board of Health certain powers over the water companies of the State; but apparently these powers are confined to requiring the company to furnish any information in its possession bearing upon matters concerning which complaints may be made by consumers. As will be seen by the act, which is given in full herewith, the Board may recommend acts or changes in construction which may relieve the causes complained about, but is given no power to enforce such recommendations. It would appear that the publicity given to the charges and to the evidence brought out in connection with them is relied upon for bringing about an amelioration of the conditions. The act is as follows:

Sec. 1. Upon complaint in writing relative to the service furnished in any city or town, or the charges therefor, made by any company engaged in the business of supplying water to such city or town or to the inhabitants thereof, signed by the Mayor of the city or the Selectmen of the town, or by 50 customers of the company, and filed in the office of the State Board of Health, said board shall notify the company by leaving at its office or place of business in such city or town a copy of the complaint, and may thereupon, after notice, give a public hearing to the complainant or complainants and to the company, and shall require the company to furnish such information in its possession as may be nec-

essary to determine the matters involved in the complaint, and after the hearing may make such recommendations concerning the reduction, modification or continuation of such charges for service, or concerning improvements in the quality of the service or extensions of the same, or concerning other matters in the premises, as the board shall deem just and proper. Any such recommendations shall be transmitted in writing by the board to the company complained of, and a report of the proceedings and of the result thereof shall be included in the annual report of the board, together with a statement of the action, if any, taken by the company upon the recommendation.

Sec. 2. This act shall take effect upon its passage.

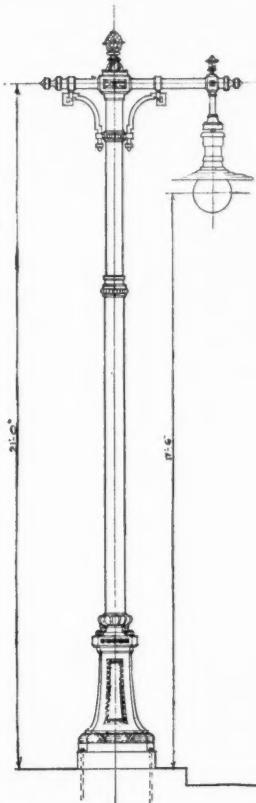
### ST. LOUIS STREET LIGHTING

IN connection with a renewal of the street lighting contracts which was about due, and the celebration of the one hundredth anniversary of the founding of the city which takes place November 9 of this year, St. Louis started a few months ago a movement for improving the street lighting of the business district. To assist in this an organization known as the Down Town Lighting Association was formed by a number of merchants, which employed experts to investigate the subject of street lighting and report thereon. The engineers of the association were Guido Pantaleoni, H. H. Humphrey and Will M. Dixon.

The engineers and committee concluded that an improved form of arc lamp lighting was the best attainable and should be adopted for the city. An investigation of the different types of lamps led to the recommendation that the metallic luminous arc lamp of 320 watts be adopted. It was realized that, to be most effective, these lamps should be hung higher than lamps of lower intensity, the engineers deciding that the standard should be 21 feet above the curb line and the tips of the arcs not less than 17½ feet. The design of the standard finally adopted was that submitted by Frederick M. Mann, of the School of Architecture of Washington University. The location of the lamps was determined upon by the engineers above mentioned, aided by S. B. Way, Superintendent of the Electric Department of the Union Electric Light and Power Company, and H. S. Sanderson, Supervisor of City Lighting.

These decided that the best location for these lamps is on each street corner at each intersection and two in the middle of each block, on opposite sides of the street; this bringing them approximately 80 feet apart. The district in which it was proposed to place these comprises 40 city blocks, and it is proposed to place 470 lamps in this area.

These lamps are to be installed by the property owners, and are to be furnished by the Union Electric Light and Power Company at cost price; the company also agreeing to install them at its own cost and to supply the new lamps. The lights will be maintained by the city under its contract with this company. The total cost of installation will approximate \$55,000 to the property owners and about \$100,000 to the lighting company. It is seen that this makes the cost to property owners about \$1 per front foot. The actual work of installing was to begin the first week in July and be ready for operation by the end of September.



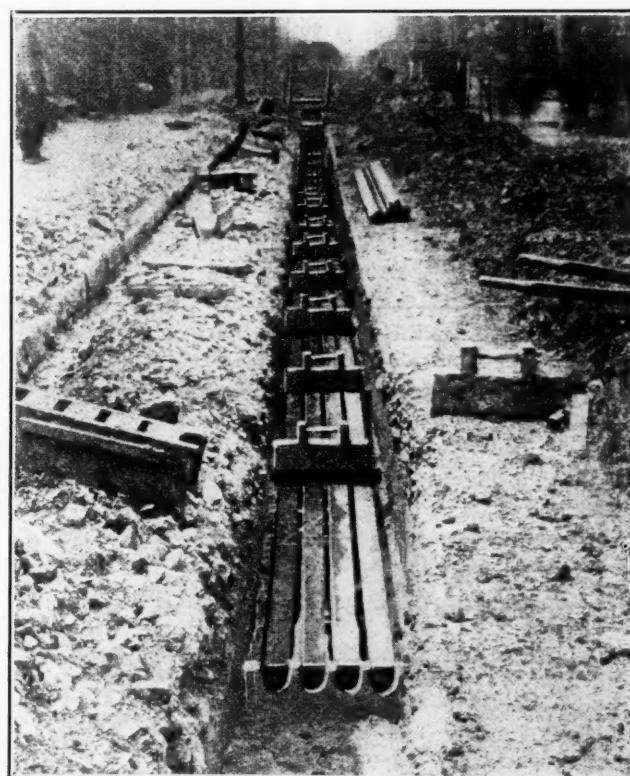
PROPOSED LAMP STANDARD

### ALL-CONCRETE WIRE CONDUITS

#### Used in St. Louis Instead of Separate or Multiple Ducts— Methods of Construction—Cost as Compared with Multiple Clay

THE almost universal practice in this country in the construction of underground conduits has been to use for these multiple clay tile, fibre wood, cement or iron pipe; these in practically all cases being imbedded in and surrounded by concrete. The ordinary method of construction is to lay a bottom course of concrete, place on this the ducts, and then place around and on top of these the remaining concrete. During the process of placing the ducts the concrete first placed is almost sure to be covered with more or less dirt, which prevents a bond between the upper and lower masses of concrete and thus causes the structure to act as two beams, rather than as a single one, thus greatly reducing its strength. Another objection to this method of construction is that the successive sections of ducts, especially those made of clay, frequently fail to align perfectly in spite of precautions taken to this end.

During the last three years the city of St. Louis has laid more than 170,000 duct-feet of all-concrete or monolithic conduits. This construction occupies less space for a given number of ducts of equal size, permits perfect inspection of the entire length of each duct after the greater part of it has been constructed, and provides a smooth straight duct opening free from all joints or possible intercommunication between ducts, and furnishes a monolithic and hence stronger structure.

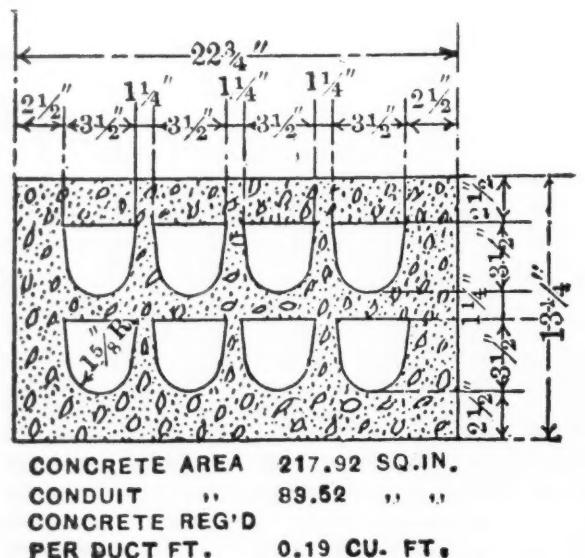
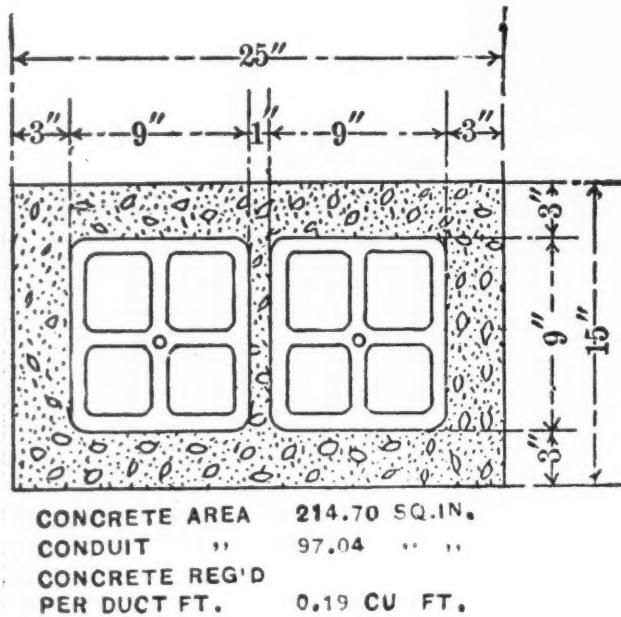


FORMS IN PLACE, READY FOR CONCRETE

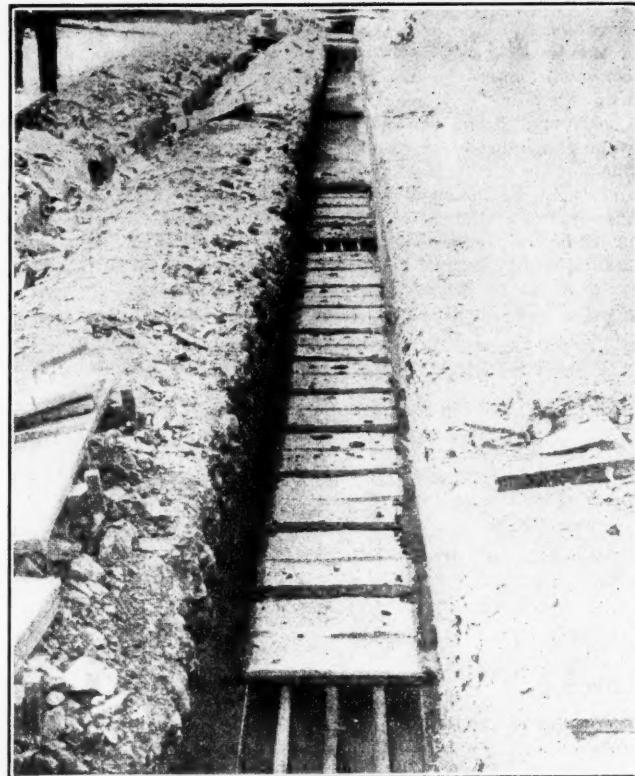
The construction of the monolithic duct is as follows: After the excavation of the trench, duct form supports are set to grade and alignment 16 feet apart, these supports being intended to hold in place the forms or molds for producing the duct openings. These forms consist of 16-foot sections of clean, straight-grained lumber, U-shaped in cross section, which produce a duct having a semi-circular bottom and a flat top. The forms are placed in the supports above referred to and are held down against the buoyant force of the semi-liquid concrete by heavy weights. The concrete is then puddled

and rammed around the forms and struck off level with the tops of the molds. In a few hours, after this concrete has taken its initial set, the duct forms are removed by carefully lifting them vertically, when any cavities or other imperfections in the duct can easily be remedied by trowel. Then smooth slabs of concrete of sufficient width to just lap over each outside duct are laid as a cover to the duct openings, and just enough mortar applied to seal the joints. On this a second layer of concrete containing duct openings is laid in a similar manner. When the desired number of tiers of ducts are thus laid, the top of the conduit is formed by placing on the concrete slabs covering the top ducts a top layer of concrete about  $2\frac{1}{2}$  inches thick. "Blind" manholes for service boxes are easily molded in this structure wherever desired. The thickness of concrete between the ducts and the bottom and sides of the trench is likewise made  $2\frac{1}{2}$  inches.

The amount of concrete required does not differ very largely from that required for multiple tile ducts; the amount being practically the same for a six-duct conduit, and about 1/3 more for 20 ducts or higher. From the construction at St. Louis it was found that while multiple tile conduits cost from 7 to 9 cents per duct foot for a 6-duct conduit, monolithic conduits cost about 4 cents. The same relation held practically constant for all larger conduits, 24-duct conduits costing from



## COMPARATIVE DIMENSIONS OF STANDARD TILE AND MONOLITHIC CONDUITS



## DUCTS WITH CONCRETE COVERS IN PLACE

5¾ to 7¾ cents per duct foot for multiple tile and only about 3 cents for monolithic conduit. Two-duct conduits cost about 6 cents per duct foot for monolithic and from 11 to 13 cents for multiple tile.

## CLASSIFYING PUBLIC SERVICE FINANCES

THE Corporation Commission of the State of Oklahoma published last month a series of regulations which it is empowered by law to enforce upon transportation and transmission companies and public service corporations in the State. These consist largely of the classification of expenditures and revenues of steam roads, electric lighting and power plants, express companies and electric railways. The classification for electric lighting and power plants is of direct interest to municipalities and is as follows:

#### REVENUE AND INCOME ACCOUNT

Municipal lighting; commercial lighting, metered; commercial lighting, not metered; power service, metered; railway service; merchandise sales profits; interest on deposits; miscellaneous receipts (junk, salvage, etc.).

#### OPERATING EXPENSE ACCOUNTS

(1) *Switchboard Expenses*.—Power plant wages; fuel; water; lubricants and wastes; miscellaneous supplies and expenses; hired power. (The amounts of fuel, water and lubricants are to be those actually used.)

(2) *Plant Expenses*.—Maintenance of steam plant; maintenance of electric plant; maintenance of buildings and fixtures; maintenance of miscellaneous equipment.

(3) *Distribution and Maintenance.*—Labor on lines; street lines and wires; transformers; meters; arc lamps; tools and instruments; services; reading meters; incandescent lamp renewals; customers' repairs; arc globe renewals; carbons used; cost of meter changes; trimmers' wages; trouble men; fire loss; tornado loss.

(4) *General Expenses*.—Rebates; salaries of general officers; salaries of clerks; printing and stationary; telephone and telegraph; advertising, canvassing and soliciting; miscellaneous general expenses and office sundries; legal expenses; office rents; insurance; taxes; horse and wagon care and hire; store-room expenses; injuries and damages.

(5) *Undistributed Accounts*.—General interest; bond interest.

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JULY 14, 1909.

## CONTENTS

Winnipeg's Municipal Lighting Plant (Illustrated). By D. J. Benham .....	49
Information for Taxpayers.....	51
Main Traps on Sewer Connections.....	51
Street Car Announcer.....	53
Louisville Water Purification Plant.....	53
Cincinnati Water Department Notes.....	54
Massachusetts Water Supply Companies.....	54
St. Louis Street Lighting (Illustrated).....	55
All-Concrete Wire Conduits (Illustrated).....	55
Classifying Public Service Finances.....	56
Small Technical Societies.....	57
Use of Intercepting Traps.....	57
Some Water Supply Statistics.....	58
Sewer Flushing in Salt Lake City.....	58
London's Honor Oak Reservoir.....	58
News of the Municipalities.....	59
Legal News—A Summary and Notes of Recent Decisions.....	65
News of the Societies.....	66
Personals .....	67
The Week's Contract News.....	68
Incorporations .....	84
Trade Notes .....	86

## Small Technical Societies

At the convention of the American Society of Civil Engineers, on July 6, President Onward Bates delivered his annual address, taking as his subject the "Status of the Civil Engineer's Profession." The address as a whole is well worth reading, and will be printed in our next week's issue. It shows that the membership of that society is now about 2,400, and classifies it into the various occupations represented. This shows that fifty members are city engineers, and that eighty-nine others are engineers of water supply, sewerage, and streets and highways; from which it appears that 5.8 per cent of the members are employed in such municipal utilities, and 12½ per cent in all classes of municipal service. This does not include the consulting engineers who specialize on sanitary and other municipal work.

It is apparent from these figures that municipal engineers could not expect that more than ten or fifteen per cent of the papers and other technical discussions of the society would be of direct interest to them. The same, of course, applies in a greater or less degree to each class of engineers.

This condition offers an argument for the society which specializes, and all of whose members are engaged in similar occupations. In England such specialization has been carried much further than in this country, an illustration being an organization of Superintendents of Sewage Works. With specialization in engineering work such segregating in societies is natural, and is best illustrated in this country by the several water works associations.

Another argument in favor of such societies is that their smaller size encourages more free and open discussion. A few months ago some of the older members of the British Institute of Civil Engineers, in letters to the technical press, deplored the formality of the meetings of that society; the interchange of ideas which was common twenty-five years ago, when the society was smaller, having given place to stereotyped remarks, in which the fear of criticism and aversion to airing original ideas predominated. This is to an increasing degree true of the meetings of the American Society of Civil Engineers also. There are several reasons for this, many creditable and inevitable, among these being the realization of the weight which is attached by both members and public to anything published by the society, which weight has increased with its size and importance.

We would not imply that the large society is not of great value to the profession. It undoubtedly is, and we advise all who are eligible to join it and add to the influence which its actions have with the public, and to the prestige which such a society gives to the profession.

But the small society will probably give the greatest immediate and personal benefit to its members. For most of our readers the American Society of Municipal Improvements is the one which should most logically receive their affiliation. This society now contains almost twice as many city engineers as does the Society of Civil Engineers, and one-third more municipal engineering employees; and at its meetings the freest discussion and interchange of ideas is encouraged. While its membership is increasing rapidly, it does not seek this for mere bigness, but because the added members will enlarge its possibilities for usefulness, its aim being to render the greatest possible service to those in municipal occupations. In the matter of contributing information it does not confine itself to the conventions, valuable as these are in this respect, but throughout the year offers itself as a medium for interchange of facts and ideas.

The small society is not a rival of the large, but each has its function, the small offering the greater advantages to its individual members along certain peculiar lines, the large having a broadening effect and serving for the advancement of the profession as a whole.

## Use of Intercepting Traps

THE paper abstracted on another page, favoring the omission of the main or intercepting trap between the sewer and the house plumbing, represents an extreme view, and probably few engineers or sanitarians would assent to all of Mr. Putnam's conclusions. We would, for instance, hardly care to advocate, as a general sanitary measure, that all air from the streets be purified by passing it through the sewer before admitting it to dwellings. But we believe that the facts stated by him are supported by excellent authority and evidence, and we hope to see the time when the majority of cities will prohibit the intercepting trap. At the same time the precaution should be observed, where traps already exist, of abolishing them by districts only. One untrapped connection on a long sewer might be objectionable, not only because all the foul air of the sewer might use it as an outlet, but still more because the foulness would be much greater than if a number of such vents gave adequate ventilation.

## SOME WATER SUPPLY STATISTICS

In a paper read before a recent meeting of the Ohio Health Officers, Mr. Paul Hansen, the Acting Chief Engineer of the Ohio State Board of Health, presented some interesting statistics concerning certain water works matters which, while not entirely original, have been assembled by him in tables which present most clearly some interesting and important facts. One of these deals with the 713 communities of the State of Ohio, showing the numbers having public water supplies, the populations included in each class and the percentage of the population served with public water supplies. The other table shows the average cost of construction and operation of a number of public water supplies, these not being confined to the State of Ohio, but being offered by the author as suggestive of general conditions throughout the country. In compiling this table the author took ten communities of each of the sizes treated of, with the exception of those under 500, of which only three were used.

## Population Using Public Water Supplies

ARRANGED ACCORDING TO SIZE OF COMMUNITIES

RANGE OF POPULATION	Number of Communities Having Supplies	Total Population Represented	Number of Communities Not Having Supplies	Total Population Represented	Percentage of Total Population Having Supplies
Under 500.....	8	2,745	264	81,182	3.3
500 to 1,000.....	26	20,267	153	107,908	15.8
1,000 to 3,000.....	85	154,260	69	97,215	61.4
3,000 to 5,000.....	37	139,557	0	.....	100
5,000 to 10,000.....	43	299,716	0	.....	100
10,000 to 20,000.....	16	235,726	0	.....	100
20,000 to 40,000.....	5	138,095	0	.....	100
Over 40,000.....	7	1,137,998	0	.....	100
Totals.....	227	2,128,364	486	280,305	88.3

According to the first table we find the somewhat surprising condition that no community in Ohio of more than 3,000 population is without a public water supply and that 61 per cent of those having between 1,000 and 3,000 population have such supplies.

The second table shows the average cost of constructing water works for communities of less than 40,000 to range between \$17 and \$22.12; while the average cost for those of over 40,000 population has been \$27. There is, as might be expected, more range in the maximum and minimum costs, the former ranging between \$22.70 and \$45.50 per capita, and the minimum between \$6.20 and \$1.4 per capita. The average annual operating expenses per capita range between 81 cents and \$1.52; the minimum between 9 cents and \$1.11. It is seen that the average cost per capita does not seem to have any relation to the population of the community, except that in the case of cities of over 40,000 population it is much higher than for smaller cities of any size.

The average annual operating expenses per capita increase uniformly up to 3,000 population, from which they decrease uniformly with the size of the town until the cities of over 40,000 are reached, where a jump of 25 per cent is made. The larger cost of water works for the largest cities is in a number of instances, and probably in those used in making up this table, due to the fact that these are often required to go to a considerable distance for gravity supplies, or else to use large streams as a source of supply and erect expensive purification works to make the water potable and safe.

## Average Cost of Construction and Operation of Public Water Supplies

ARRANGED ACCORDING TO SIZE OF COMMUNITIES

RANGE OF POPULATION	Average Total Cost of Installation	Average Cost per Capita	Maximum Cost per Capita	Minimum Cost per Capita	Average Cost per Person Using	Average Total Annual Operating Expenses	Average Annual Operating Expenses per Capita	Average Annual Operating Expenses per Person Using	Minimum Annual Operating Expenses per Capita	Maximum Annual Operating Expenses per Person Using
*Under 500.....	\$8,557	\$20.02	\$43.50	\$6.20	\$40.84	\$508	\$1.10	\$2.05	\$0.09	\$4.38
†500 to 1,000.....	17,948	22.12	38.60	9.15	35.18	1,071	1.28	1.99	.40	5.50
†1,000 to 3,000.....	32,442	18.31	32.50	14.00	29.90	1,677	1.52	2.36	.73	4.75
†3,000 to 5,000.....	68,089	17.41	29.20	10.95	20.95	5,478	1.41	1.73	1.11	3.74
†5,000 to 10,000.....	147,283	17.05	32.40	7.15	28.36	7,616	1.14	1.92	.75	3.08
†10,000 to 20,000.....	443,280	21.50	45.50	10.00	23.50	18,327	.86	1.03	.51	2.27
†20,000 to 40,000.....	667,200	18.30	22.70	8.71	22.90	28,760	.81	1.03	.55	1.41
†Over 40,000.....	7,962,000	27.00	43.30	11.50	33.90	293,860	1.01	1.36	.73	2.08

\*Average of three communities.

†Average of ten communities.

## SEWER FLUSHING IN SALT LAKE CITY

An unusual method of using automatic flush tanks was described by Mr. L. H. Krebs in a paper before the Utah Society of Engineers. The paper was a description of the sewer system of Salt Lake City. After stating that Miller-Potter flush tanks are used, discharging 280 gallons at a flush, he describes their use, and also hose flushing, as follows:

The man in charge of the flushing department in passing over a district turns on the water in a number of flush-tanks, and by the time he returns to the starting point they have filled and discharged a few times. Then he passes over the same route and shuts off the water again and proceeds to those of another district to be operated in a similar manner. And since the sewerage system at this time is 106 miles in total length, it requires considerable work to keep up a thorough inspection. This is found to be the most convenient, economical and effective method of maintaining the entire system in a clean and satisfactory condition.

A system of hand flushing is also employed in the central part of the city or business district, where the sewers are laid upon such slight grades that the velocity is insufficient to prevent deposits. This method is by the use of sufficient fire hose carried upon hose-reel with four-wheel carriage and horse and two men employed to operate the same. The manhole is provided with a slot on the lower side, in which a steel plate is let in by chain and the hose is reeled off and attached to a nearby fire hydrant, when the water is turned on, the manhole is filled, the steel plate withdrawn and the entire contents of water rush out into the sewer and produce the desired results. By the use of this system the district is gone over every week or ten days and the sewer is kept in successful working condition, and it is a very rare occurrence for the department to have to record a complaint directly traceable to sewer gas.

## LONDON'S HONOR OAK RESERVOIR

WHAT is believed to be the largest covered reservoir of its kind in the world was opened a few weeks ago for service in connection with the water supply of London, England. Its principal use is to afford low service pressure to the southeast portion of the area served by the Metropolitan Water Board, although it is possible to supply water from it to the other side of the Thames by a main beneath that river. The general construction is that which has become practically a standard in this country, a concrete bottom of inverted groining, piers at the apexes of the groining and an arched roof. The roof, however, differs from ordinary American practice in not being a groined roof, but rather a series of parallel arches, these resting at their springing lines upon flat arches sprung between the piers. These piers are 21½ feet between centers in both directions. By two division walls at right angles to each other the entire reservoir is divided into four sections. The piers and roof are of brick work, nineteen million brick having been used for this purpose, which were manufactured by a special plant constructed on the ground from the clay excavated from the reservoir. The brick arches of the roof are covered with 6 inches of cement concrete carefully surfaced with troweled cement.

The reservoir is 824 feet long and has a maximum width of 587 feet, the actual water area being a little over 10 acres. The depth of water varies from 21 feet 6 inches to 34 feet. The reservoir is filled by means of a 42-inch pipe which conveys filtered water from the pumping station at Hampton. The reservoir, which is known as Honor Oak Reservoir, cost approximately \$1,200,000.

## NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

### ROADS AND PAVEMENTS

#### Look for Surplus in Assessment Fund

Akron, O.—Certain residents of Crosby street would like to know what became of \$1,800, the sum that was left over from the property owners' share of the paving costs. Crosby street was improved with macadam some 18 years ago, and assessments on the property owners raised \$1,800 more than the cost of the paving. The property owners supposed at the time that the money would be rebated back to them but it has never been located since. Now, one particular resident of the street says that he intends to ask for his portion of the money and he is confident that he will get it. With 6 per cent interest for 18 years the money due Crosby street people amounts to \$3,744, a little more than twice the amount if it had been paid them.

#### Scarcity of Pavers in Baltimore

Baltimore, Md.—Local contractors are complaining about the scarcity of pavers on Belgian block and vitrified brick work. City Engineer B. T. Fendall has been told that the work cannot proceed as it should unless more men can be secured. It is stated at the City Hall that more union pavers cannot be secured in Baltimore. The City Engineer is barely able to keep his repair gangs up to the standard as to numbers.

#### Concrete Pavement Patents Discussed

Marshalltown, Ia.—Infringement of the Blome patent for concrete pavement construction by the city specifications was claimed by representatives of Rudolph S. Blome & Co., Chicago, Ill., when bids for about \$50,000 worth of work were received at Marshalltown. W. J. Simnek, in behalf of his company, served the city, through the city clerk, with a written notice that his company would claim a royalty of 25 cents per square yard if the work is done under the city specifications. Other bidders took issue on the question of the validity of the concrete patents, one bidder claiming that he had been doing work for fifteen years under practically the same specifications. The low bid on city specifications was 33 cents per square yard below the Blome company's bid.

#### Declines to Use Oak and Beech for Paving

Cincinnati, O.—Claiming that oak and beech woods have been found impracticable through Government tests for street paving, the Board of Public Service will not consider the offer made by C. Crane to pave streets with the material at nearly 50 per cent below what the city now pays for yellow pine block. A letter containing the offer has been referred to City Engineer Sundmaker.

#### Steel Rail Road Drag

Steelton, Pa.—The Borough has decided to use the road drag method of improving the streets in connection with the oil treatment and Street Commissioner Meshey and the Highway Committee have decided to have a drag built. Instead of split logs being used the machine will be built of steel rails, and plans for it are now being drawn at the steel works. Rails are used as the bottoms of the streets in the borough are composed of cinder instead of clay, and the cinders, it is believed, would splinter logs in a short time.

#### Complains of too Many Small Repair Orders

Trenton, N. J.—Councilman John H. Kafes, at a Common Council meeting, charged the Street Committee with violating the law by practically awarding an \$8,000 street repair contract without competitive bidding. He presented figures which show that the Filbert Paving and Construction Company is doing a large amount of repair work, and is being paid for it by a series of bills, none of them exceeding \$200, the maximum amount which the Street Committee is allowed by law to expend.

#### Will Test Foundation Clause of New Paving Law

Kokomo, Ind.—The provisions of the new paving law requiring concrete foundations under all pavements will be tested in the courts. The law provides that after the Board of Public Works has decided on the improvement of a street it must make specifications for four kinds of wearing surface. The law also provides that the Board of Public Works must make specifications for a foundation suitable for any kind of modern city pavement—in other words, concrete. The Kokomo Board of Public Works decided to improve East Sycamore street and had four kinds of material advertised for wearing surface and also specifications for a foundation suitable for a modern city pavement. But forty-two of the forty-three resident property owners in Sycamore street came in with a petition for a brick pavement on a rolled-stone foundation which would save them about \$6,000 as compared with asphalt. The contract was let on this basis. When the work is completed, it is stated that the City Comptroller will be enjoined from paying for the work. In the meantime papers have been prepared to enjoin the Board of Public Works from letting the contract to improve West Union street under conditions similar to those under which the Sycamore street contract was let.

#### Public Roads in Alabama

Birmingham, Ala.—A short time ago letters were mailed by the Age-Herald to every Probate Judge in Alabama asking for information on the building of good roads. Estimates based on the replies give a total mileage of public roads in Alabama of 42,000. Improved mileage reported is 2,789. This will cover probably the mileage of improved roads in the State. There is considerable difference of opinion as to what constitutes a really improved road. There are probably less than 800 miles of substantially built highways in the State that would be pronounced as improved by a good roads expert. Most of the improvements reported have been made in the last four years.

#### Storms Do Great Damage to Graded Streets

Sioux City, Ia.—Two heavy rains did so much damage to the streets that Street Commissioner Tom Ford states that all of the work done this year on dirt streets has gone for nothing. It will take the department the remainder of the summer to repair the damages. The damage was caused by the clogging of inlets with débris and grass which property owners had thrown in their gutters. The accumulation was carried to the catch basins, clogging them so that the water rushed over, and overflowing the gutters cut great gullies and ditches, even in the streets where combined gutter and curbing has heretofore proved effective in protecting the roadway.

#### Mud-Tracking Law Defined

Washington, D. C.—As a result of a hearing given by the District Commissioners regarding the enforcement of an amendment to the police regulations regarding the tracking of mud from excavations, Commissioner H. L. West has moved before the District Board that the police be given instructions as to whom this regulation applies. Commissioner West has moved that "the Major and Superintendent of Police be directed to instruct the members of his force that the amendment only relates to persons engaged in excavating or having charge or control of excavations, or who may be engaged in or may have charge or control of conveying material from excavations. "In other words, that the construction placed upon this section by some of the officers of the force is not warranted by its language," said Mr. West. "It does not refer to brick carts, coal carts or other delivery vehicles which may be compelled to travel over muddy streets or alleys in the ordinary course of business."

## SEWERAGE AND SANITATION

### Health Department Inspects Health Resorts

Albany, N. Y.—Following instructions from Dr. E. H. Porter, State Commissioner of Health, inspectors of the Department have started on tours of inspection of the various summer resorts in the State to gather information relating to the sanitary conditions surrounding the places which are crowded this time of the year by persons in search of health and rest. Every section of the State is to be covered by the inspectors, who will file reports. In the past many unsanitary places have been found due mostly to the methods used for disposing of sewage and the use of cesspools. When unsanitary conditions are found to exist notice is served on the owner to relieve conditions. As a rule, conditions are changed, the owners fearing to have the facts known. Inspectors are required to report as to climatic and topographical conditions; the character of the soil and surrounding country; general description of the buildings and ventilation; if the windows are screened for flies; capacity and the arrangement of rooms as to sunlight. The disposal of sewage and garbage and the water supply are investigated thoroughly. The water is analyzed and even the plumbing fixtures are carefully examined. Cesspools and stagnant waters about a resort are frowned on and owners are required to eliminate such conditions at once.

### Grocery Stores Are Promptly Screened

Chattanooga, Tenn.—Eighty-seven proprietors of grocery stores were given twenty days to have their places of business screened and on the second inspection by Food Inspector Ben H. Brown, every store except one had complied with the requirements of the official. The Food Inspector has also notified proprietors of all groceries and restaurants that absolutely no goods must be placed out on the sidewalks. The edibles must be kept strictly behind the screens, free from the dirt of the street and the touch of passersby.

### Carbolic Acid for Galveston

Galveston, Tex.—The city has just received its large consignment from Europe of 160 barrels of crude carbolic acid which will be used in the campaign of destruction of pestiferous insects and disease-breeding microbes. Galveston aims to show the thousands of people who will arrive in its city during the cotton carnival not only a beautiful, but the most sanitary city in the union.

### Making Complete Map of Storm Water System

Dallas, Tex.—City Engineer J. M. Preston is making a map and record of all the storm water sewers in the city. The location, direction, extent, dimension and opening of every storm sewer will be shown, including the connections, manholes, lampholes and the sort of connection, whether from a street surface or from a cellar or basement. Work of recent years is fairly complete, but the records are sparse for the days when the city was merely a village. It is the declaration of the engineer that no matter how long it may take, the office will go ahead with the completion of this map and the book records to go with it. Discoveries are made of sewers that no one in the office remembered to have seen or heard of and of which there is no record. Such are those where additions have come in with fair connections and other places where basement and cellar connections have been made. It is declared to be a large task, but no extra men have been asked for to pursue it.

### Conhocton Street Sewer Leaky Near Water Works

Corning, N. Y.—Frank Lawrence, of the Lawrence Plumbing Company, who had many years' experience in the practical conduct of the Corning Water Works system while under private control, got an opportunity to demonstrate a claim made by him for several months that the pollution of the water works' impounding basin might easily be due to defective sewers and leaking sewage in the vicinity. The sewer on Conhocton street was plugged at Market street, and in the alley between First and Second street. Then water equal to 100 gallons a minute was poured into the sewer for sufficient time to fill the section of plugged sewer up to overflowing many times. The water disappeared almost as fast as it was poured in, thus showing that the sewer was not by any means water tight.

## WATER SUPPLY

### Albion Has Annual Water Famine

Albion, N. Y.—Albion residents have become aware that the annual water famine has started and no municipal question in years has so aroused the taxpayers as has this one. The village authorities are being urged to take action to prevent a further annoyance from the water problem which has confronted them every summer for the past few years, and has forced citizens either to drink boiled Erie Canal water during the dry season or go without.

### Purchase Pump From Local Company

Battle Creek, Mich.—After months of deliberation the Board of Public Works has decided to purchase a pump from the Union Steam Pump Company, of Battle Creek, although other manufacturers of pumps alleged to belong to a trust claim that the local company cannot fulfil the requirements. Before the pump is installed it will be tested and will not be accepted unless it comes up to the specifications.

### Louisville Filters in Operation

Louisville, Ky.—Clear water is at last a reality in Louisville, the new 100,000,000-gallon reservoir filter having lately been put in operation. The capacity of the plant is 37,500,000 gallons each twenty-four hours. The estimated value of the entire system is now \$10,000,000.

### Cincinnati Water Works Officially Completed

Cincinnati, O.—The new water works were officially transferred to the city, July 1, by the Water Works Trustees who have had charge of the construction.

### Collingswood Gets Relief

Collingswood, N. J.—The water question which has caused so much disturbance in Collingswood the last few weeks is settled and a good supply of artesian water is being had by the residents. A line of piping has been connected with Camden mains and 600 gallons a minute are being pumped into the water mains. Mayor Collings called a meeting in his office to settle the disputes and it was decided to connect with Camden mains, and during that time necessary repairs to the water company's plant will be made.

### Niagara Falls Water Works Improvements Delayed

Niagara Falls, N. Y.—For the time being, the work of the Water Commission, to supply the city with wholesome water, is held up by the decision of the State Water Supply Commission on the application of the local board to carry into effect the plan approved by the taxpayers on March 10. The State body has approved the plans, but to its approval has tacked a condition by which it is "sought to render the city liable in damages to the Niagara Falls Water Works Company."

### Water Main Continually Developing New Leaks

Lockport, N. Y.—The city's new supply line from the Niagara River is leaking badly. Commissioner Smith has offered a resolution which was adopted by the Water Board stating that between April 15 and June 24 there have been 110 leaks in the pipe, which has been in use only a few months; that each leak costs \$8 or more to repair; that the number of leaks is increasing rapidly each day. The resolution asked the Aldermen to take some action.

### Syracuse Distributing Reservoir Lowest in Years

Syracuse, N. Y.—The depth of water in the Woodland reservoir recently registered 27 feet, the lowest point reached in 19 years. Superintendent George H. Beebe is connecting the old and new mains at a distance of about five miles from the lake. This will give a better head on account of reduced friction, but not much relief can be expected for a month, when the new main will be completed.

### Theatres Object to Water Meters

Washington, D. C.—A delegation of local theatrical managers appeared before the Commissioners to protest against the installation of detector meters on the water services which are placed in theatres, to be used only in case of fire. It was contended that the meters, which cost from \$250 to \$500, are unnecessary in view of the fact that the general water supply is registered, while there is present at all performances a fireman, whose duty it is to detect and report any illegal use of water.

## STREET LIGHTING AND POWER

### Light Prices Reduced by City

Cleveland, O.—A decision to reduce the charges for electric lighting furnished by the Municipal Lighting Company was reached at a conference between Mayor Tom L. Johnson, W. J. Springborn, President of the Board of Public Service, Superintendent Kibby, of the lighting plant, and Water Works Superintendent E. W. Bemis. The new schedule will make the cost of electric light to patrons of the municipal company 10 cents for the first five units, and 6 cents per unit up to 200 units, and 5 cents per unit for 200 and over, plus 10 per cent, which is deducted if lighting charges are paid before the fifteenth of the month. There will be a minimum charge of 50 cents to all users. Under this rate, schedule users of fifty units will save 18 cents and others in proportion. "Our object in making this reduction is to give our patrons the benefit of the profit made by the company last year," said Mr. Springborn. Springborn declared the municipal company to have made a clear profit last year of \$4,000.

### Free Light for Public Library

Los Angeles, Cal.—"Comply with the terms of your franchise and furnish electric light free to the Public Library, or I will ask the Council to revoke your franchise." This is the ultimatum Mayor Alexander has sent to the Pacific Light and Power Company, a Huntington corporation. When the Library occupied quarters in the City Hall it had no bill to pay for lighting, but when it moved into the Laughlin Building the free light clause in the franchise was overlooked and it paid bills amounting to \$100 a month. It is doing the same now in its new quarters on Broadway, and the Mayor intends to save the city \$1,200 a year if possible.

### Company Voluntarily Gives Lowest Gas Rate

Lynn, Mass.—The Lynn Gas and Electric Company has voluntarily reduced the price of gas from 85 to 80 cents per 1,000 cubic feet in Lynn, Swampscott, Saugus and Nahant. The citizens of this district will now enjoy the lowest rate prevailing in the State except in Boston proper.

### Overhead Wires Block Valuable Gift to City

Oakland, Cal.—Mayor Mott has threatened to cut down the poles carrying overhead wires of local telephone, telegraph and electric lighting companies provided they do not begin the work of building conduits. A property owner, F. M. Smith, has offered to pave Fourth avenue at a cost of \$60,000 at his own expense, if arrangements are made by the city to have the wires placed underground.

### Portland Agrees with Lighting Company

Portland, Ore.—After many months of delay, with fighting and wrangling, the City Executive Board has authorized a contract for lighting the streets and municipal buildings of the city with the Portland Railway, Light & Power Company. The contract is for a term of five years, and the city is to pay \$56 a year for each arc light fed from aerial wires and \$75 a year for each arc light fed from underground cables. The charge for incandescent lights will be at 2½ cents per kilowatt hour. The company makes all extensions for new lights without extra cost to the city providing the extensions are not more than 1,200 feet from any other lamps or wires of the lighting circuits. If extensions are to be for a greater distance than this, the city will have to pay for them.

### Fail to Agree on Lighting Franchise

Rockville, Md.—There has been a temporary halt in the arrangements for electric lighting service for the residences, churches and business establishments of Rockville, because of the failure of the Washington Railway & Electric Company, which proposes to furnish the current, and the Rockville Town Council to agree upon terms. The company wants a free franchise for 25 years, but the best the Town Council is willing to do is to grant a franchise free of taxation for five years, after which the town is to receive 2½ per cent of the gross receipts for 25 years. The Council also insists that there be no increase in the rates as first fixed, and that the company enter into a contract not to withdraw the service as long as the number of subscribers does not fall below the number started with. The company has the Council's proposition under consideration.

### Obstruction of Lights by Trees

Washington, D. C.—The presence of shade trees is a serious obstacle to the proper lighting of the streets of Washington, according to Walter C. Allen, electrical engineer of the District, who has recommended to Commissioner Macfarland that several changes be made, either in the location of the trees or in the structure of the sidewalks. The common practice in Washington, Mr. Allen says, is to plant the trees from 12 to 18 inches back of the curb line, and with an average spacing between trees of about 28 feet. The position at the curb line is also the best for the lamp posts; in fact, it is the only one, Mr. Allen says, unless the center of the roadway be occupied. In the past the posts have been placed in line with the trees, thus locating them where the greatest obstruction from the foliage results. "The irregular spacing of the trees," Mr. Allen says, "also prevents a uniform arrangement of the lamp posts, while the practice of trimming the trees so low still further obstructs the light. The extent to which the foliage interferes with the lamps is seen from the fact that in the summer of 1908 it was necessary to trim 9,657 trees which were obstructing 5,946 lights. A great deal of interference on streets already provided with trees and lamps could be avoided by narrowing the roadways, thereby enabling the department to move the lamp posts out to the new curb line and leave them clear of trees. This was done in a few instances until the changing of the width of the roadways was prohibited by Congress."

### Ornamental Illumination in Topeka

Topeka, Kan.—The municipal advertising commission is endeavoring to bring about an agreement between the State authorities and the merchants of the city to carry out a general plan of illumination. It is planned to light Kansas avenue from Fourth to Ninth street with mammoth arc lights, beautiful arches of incandescents, and on the State House place large lights which will outline the dome, and clusters of arc lights on the extreme top of the peak of the dome.

## FIRE AND POLICE

### Straw Hats for Policemen

Cambridge, Mass.—Hereafter during the summer months a hat of brown straw will be a requirement of the regulation police uniform, in place of the former gray helmet. Similar hats are worn by the police of Newton and Brookline.

### Breaks Record for Hose Laying

Charleston, W. Va.—In a recent test held by three hose companies at the corner of Lee and Broad streets, truck company No. 1 broke the world's record of 16 seconds made by Hale fire-fighters at the fire-fighting arena at the Louisiana Purchase Exposition in St. Louis in 1904.

The local truck company established a record of 13 1/5 seconds. The contestants unscrewed the nipple on the street water plug, connected and laid 150 feet of hose, broke the hose connection, fastened on the nozzle and had the water running in just 13 1/5 seconds, which breaks any known official record.

Engine company No. 1 was a close second, making the run in 18 1/5 seconds, while hose company No. 2 made the run and showed water in 21 seconds.

The progress of the Charleston Fire Department has been wonderful under the discipline of Chief Rand. Twice a week these contests have been held, the best time at the start being 50 seconds. Gradually the time has been cut down by hard training until the seven young athletes in truck company No. 1 have established a record of which any city in America might well feel proud.

The members of the truck company who lowered the record are Captain Savage, Lieutenant Gardner and Firemen Givens, Nugent, Sanders and Whittaker.

### Is Police Chief; Patrols the City

Xenia, O.—From now on Xenia will have a police force of three men, including the chief. Chief Smith is the only man on at day and the other two are on at night. This order is in compliance with the ordinance cutting the force to three men.

**Automobile Engine to Go in Reserve Service**

Newark, N. J.—Provided plans tentatively discussed by the Fire Board are found feasible, the automobile steamer at the quarters of Engine No. 3 will be placed in reserve. The Commissioners are considering the substitution of a three-horse hitch in the place of the ponderous pump. President Burke, in speaking of the suggested substitution, said that "Mt. Pelee" would be in no way put out of service, but it seemed to be a rather useless proposition to send the big steamer to every alarm in the stations assigned to it. To hold the engine in reserve, available for emergency purposes and placed on about the same footing as the water tower, was the idea of Mr. Burke. "Mt. Pelee's" pumps are powerful enough to supply the big tower pipes, and the two could be used in conjunction. When the change will be made the Commissioners are not prepared to say, but it is denied that "Mt. Pelee's" propensity to start little blazes along the street with sparks from her funnel or tearing up the asphalt on a hot day are more than minor factors in the contemplated shift. Up to eighteen months ago the engine went out on second alarms only, but since that time has been responding to first alarms in its territory.

**Deadly Weapons Dumped in Lake**

Chicago, Ill.—Nearly 600 deadly weapons which the police have confiscated in the last six months have been cast into the lake. The city tug took the Police Department custodian beyond the three-mile limit and he dropped overboard the revolvers, dirks, slingshots, knives and other deadly weapons in 30 feet of water. This disposition of the weapons is prescribed by the city code.

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**GOVERNMENT AND FINANCE**

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**Commissioners Install New Accounting System**

Ardmore, Okla.—The Mayor and Board of Commissioners, on entering upon their new duties, engaged a firm of auditors to report on the city finances. The report has been received, together with recommendations as to improved accounting. The Commission states to the public that they have arranged to install such system as has been advised and they hope within the next month or six weeks to get it properly installed and to be able at any time to give a full and complete detailed statement of all the city's business to any citizen who may desire to have such information; to be able to publish quarterly a report showing a full, clear and complete statement of all taxes and other revenues collected and expended during the preceding quarter, indicating the respective sources from which the money was derived and the disposition thereof, and showing all the outstanding obligations of the city.

**Negligence Causes Loss of Contract**

Joliet, Ill.—Because Monahan Brothers have been lax in fixing up the streets after they have finished contract work and have even neglected such duties when their attention has been called to them by the city authorities, they lost a contract for building the John street water main when it was let by the Board of Local Improvements. The bid of Monahan Brothers was \$25.90 less than that of William Moran for the work, but the contract was awarded to Moran for the reason given above.

**The Recall in Spokane**

Spokane, Wash.—Charged with defeating the will of the people, Councilman Leonard Funk, a prominent labor union man, and Edward V. Lambert, a master plumber, may have to secure indorsement at the polls from their constituents or retire from the City Council. This is in accord with the provisions of the recall amendment adopted at the last municipal election in Spokane. The petition against Councilman Funk sets forth that he is not working in the best interests of the people of his ward; that he is not carrying out his ante-election pledges to have city work done by day labor, and that he is working in the interest of contractors. Thomas Rork and Frank Green are leaders of the movement. The charges against Councilman Lambert are that he is not carrying out the expressed wishes of the people and that his work in the City Council is not satisfactory. The two members emphatically deny the charges contained in the petitions and say they are ready and willing to go before the constituents on their records.

**Voting Machines Not Constitutional in Ohio**

Columbus, O.—Voting machines are not to be permitted in the State of Ohio. The Supreme Court determined this question in the case of the State on relation of Albine Castlinger against the Board of Deputy Supervisors of Cuyahoga County. The court holds that the act of the Legislature of April 25, 1908, and the amendments thereto providing for the installation of election machines is void and contrary to the second section of article five of the constitution of the State, which ordains that all elections shall be held by ballot. This means much difficulty in the handling of the vote at this fall's election, and will result eventually in the creation of more voting precincts. With machines votes can be cast very much more rapidly than by the use of the ballot.

**Municipal Research in Cincinnati**

Cincinnati, O.—A Bureau of Municipal Research has recently been organized in Cincinnati. Rufus E. Miles is the director, and Joseph S. Neave, chairman of the trustees. The office is in the Neave Building.

**May Order Destruction of Worthless Books**

Berkeley, Cal.—The destruction of over one thousand copies of the charter of Berkeley, recently adopted by this city, may be ordered by the Trustees if the recommendation of City Auditor M. L. Hanscom is received favorably. The charters, printed at an expense of over \$250, are said to contain several errors, the most glaring of which is a system of numbering the paragraphs arbitrarily adopted by L. Ernest Phillips, to whom the job of compiling the book was assigned, which makes the book practically worthless for reference purposes. The bill for the printing of the books has been held up by the Trustees, and it is possible that they will refuse to pay for the work, leaving the debt in Phillips' hands. Several mistakes were made in compiling the book, among them being the omission of the municipal ordinances. In place of these articles written by local celebrities concerning the beauties of Berkeley were used to fill out the covers.

**Engineer's Estimates to Be Withheld from Contractors**

Madison, Wis.—Contractors who bid on city work will hereafter not be furnished with an estimate by the City Engineer. Alderman Sommers introduced a resolution that the Engineer's estimates of the cost of public improvements be furnished only to the Board of Public Works and not be given to contractors. It further provides that the contractors take the plans and specifications as a basis in preparing their bids. The estimates of the Engineer are not to be furnished to them until after the bids have been opened. The resolution was unanimously adopted.

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**REFUSE COLLECTION AND DISPOSAL**

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**Pittsburg's Rubbish Record**

Pittsburg, Pa.—The figures for the Clean City day have been compiled. They show that 27,500,000 pounds of dirt were taken out of hiding places and carted off to the dump. Instead of one clean day the city had six. The first, Monday, 3,125 loads of rubbish were removed, and the people kept on piling up cast-off things in the street. Tuesday the Bureau of Highways and Sewers removed 2,011 loads; Wednesday, 1,898 loads; Thursday, 1,771 loads; Friday, 1,216 loads; Saturday, 1,000 loads, a grand total of 11,021 loads.

**Permit to Dump Garbage in Mississippi to Be Revoked**

New Orleans, La.—The plans being developed for changing the system of garbage disposal by dumping it in swamps instead of in the Mississippi River are being hurried by the action of the Federal authorities, who have made affidavits against Commissioner Smith, of the Department of Public Works. Mayor Behrman has requested the Senators from Louisiana to ask the Secretary of War not to revoke the permit to dump garbage in the river below New Orleans until the new plant can be put in operation. The new plans contemplate the construction of receiving stations along the Belt Line Railway, the use of special iron-bottom dumping garbage cars and a disinfecting station near the proposed dump in the swamp where the cars will be washed and sprayed.

### Parade of Juvenile Street Cleaning Leagues

New York, N. Y.—The school children of Manhattan, the Bronx and Brooklyn who have organized juvenile leagues to assist the Street Cleaning Department to keep the streets clean celebrated their reorganization last week with a big demonstration at Dexter Park, Jamaica and Drew avenues, Woodhaven, L. I. There was a parade of the 2,550 children, and a review by Commissioner William H. Edwards and Comptroller Metz.

The juvenile leagues were first organized during the administration of Col. Waring, in the spring of 1896, and were in operation for nearly five years before they were disbanded on Sept. 1, 1900. The work of educating the children, however, was continued; addresses were made in the public schools to urge the little ones to refrain from littering the streets.

On Jan. 5, 1909, a few days after he took office, Commissioner Edwards sent for R. S. Simons, who organized the leagues during the Waring administration, and decided to reestablish the leagues. There are now thirty-five leagues in existence in Brooklyn, Manhattan and the Bronx.

### Will Collect Garbage at Night

Perth Amboy, N. J.—As soon as due notice can be given to the public, the health authorities propose to have all garbage in this city collected at night, thus eliminating the nuisance now arising from the collection of refuse. Arrangements have been made with Contractors Graham & McKeon to that effect. This will be a boon to the city, for since the warm spell started there has been nothing but complaint after complaint given to the health authorities, for which the residents, in most instances, have been to blame. They have allowed their cans and garbage receptacles to be placed on the street long before the arrival of the collectors and have allowed them to remain there for days after the collection has been made. This is the case along the city's principal streets.

## RAPID TRANSIT

### Object to Open Cut for Subway

Cambridge, Mass.—Merchants along Massachusetts avenue are protesting against allowing the Boston Elevated to build the new Cambridge subway by means of an open cut. It is understood that this method is to be used between Central Square and the river and from Harvard Square to Quincy Square, where a ledge has been encountered at a depth of about 18 feet.

### To Be Double-Deck Subway

New York, N. Y.—It has been announced by the Public Service Commission that in preparing the plans for the Lexington avenue subway provision will be made for a double-deck tunnel instead of the four-track single-deck tube originally planned. The commission says that the change has been made to accede to the wishes of the Lexington avenue property owners. Chairman Willcox said that he hoped that the property owners would now give their consent to the subway and so save time. In a communication sent to the property owners the commission explains the details of the modification which has been made and asks for consent.

### Ten-Cent Fare to Coney Island Legalized

New York, N. Y.—The Public Service Commission has legalized a 10-cent fare to Coney Island over the tracks of the Coney Island & Brooklyn Railroad Company by holding that the company is justified in charging a 10-cent fare on Saturdays, Sundays and holidays. The commission then says that the continuation of the company's present practice of charging 10 cents on all days of the week should only be continued after a conclusive showing that the former practice of charging 5 cents on five days of the week was the main cause of a loss in net earnings. The commission adds a warning that it must rehabilitate its property and that the commission will see that replacements are ultimately paid for out of earnings before earnings are used for dividends.

## MISCELLANEOUS

### New Bath for Brooklyn

Brooklyn, N. Y.—The new Hamburg avenue bath, at the northeast corner of Hamburg and Willoughby avenues, was opened last week. The bath is the largest in the borough and one of the finest in point of construction. It is built of Indiana limestone and is three stories high. This makes it the tallest bath of the borough. It is 96 feet long and 43 feet wide. Its architectural style is of the Renaissance period. The building contains 98 shower baths and 8 bathtubs. In the front court there are two drinking fountains. On the first floor are offices, rooms for the attendants, and several showers. The two other floors are occupied entirely by baths. The building is divided in the middle, one side to be used by men and boys and the other by women and girls. The services of a dozen men and women will be required to look after the patrons. It is estimated that the place will accommodate about 5,000 persons a day. The cost of the building was \$165,480. Its site, which is not covered entirely by the building, is valued at about \$7,000. Work began on the structure on Aug. 1, 1907. The interior of the bath is finished neatly, but not much attention has been paid to ornamentation. The showers are lined with marble. In heating the building the warm air is carried to the different parts by ducts, while the foul air is driven out by fans. Three firemen and three engineers are required to operate the heating and ventilating system.

### Viaducts Being Built Over Railroad Crossings

Long Island City, N. Y.—The work of eliminating the railroad crossings near the terminal of the Queensboro Bridge has been begun. A viaduct extending from the bridge approach, at Jackson avenue to Thompson avenue, and another viaduct near that point are being built. Borough officials think that with the building of the Thompson avenue viaduct and with Gosmer and Laurel Hill avenues depressed under the many railroad tracks, crossing dangers to automobilists and drivers will be entirely removed.

### Brown Tail Moths Invade New York State

Rye, N. Y.—Brown tail moths have been discovered by Charles Hotaling, the warden of Greenwich, Conn., on the estate of W. W. Cook. Scores of employees of the State Department of Agriculture were put to work burning hundreds of acres of grass and shrubbery. The moths are supposed to have been introduced in some shrubbery bought from a Boston concern.

### Autoists Ask Modification of Laws

Washington, D. C.—On behalf of automobilists, W. S. Duvall, representing the Automobile Club, presented to the Commissioners a protest against the drastic enforcement of certain laws and made the following suggestions:

That the regulations as to rear lamps going out be modified, so that a driver having oil and a working light be held not responsible.

That slight infractions of the speed limit in outlying districts, and where there is no danger to others, be not made the cause for arrest.

That the emission of a reasonable amount of smoke be not noticed, and where unreasonable amounts are discharged the driver be warned.

That every vehicle after sundown be made to carry lights, visible ahead and behind, especially if they travel the park roads or beyond the fire limits.

That printed rules of the road be prepared and put in the hands of every driver of an automobile or a horse, and that the police be instructed strictly to enforce them against both classes.

That the police have their attention especially directed to broken glass, nails, boards with nails, and horseshoes in the streets that are calculated to injure automobile tires as well as the hoofs of horses, and that they be instructed to arrest every person found guilty of such an offense.

That the police be instructed that it is no violation of law for an automobile to drop a reasonable amount of oil, and that no arrest should follow.

That the mounted police be instructed that their sole mission is not to watch automobiles, but, in addition, to do general police duty; they should be equally careful in watching horse vehicles and enforce the rules of the road against one as quickly as against the other.

#### FOURTH IS LESS FATAL

##### Safe and Sane Celebration in Five Cities—Deaths of Country Over 23 Below Last Year's—Death Roll

Chicago, Ill.—Records compiled by a daily newspaper of accidents and fatalities incident to the Fourth of July celebration show that casualties have been diminished all over the country by more rigid municipal regulations regarding the sale and use of fireworks. Chicago and its suburbs gave strong evidence of the progress that has been made. As compared with last year's record of 12 dead and 114 injured, but one death occurred and the total number injured, as reported, was 65. It was the quietest and sanest Fourth Chicago has had since the city was a village, and the din of previous years was almost totally squelched by police regulations and the awakening of public sentiment.

Cleveland, O.—Cleveland probably made the best record of any city of its size in the country. While there were 10 persons killed and 62 injured during the one-day celebration in 1908, the two-day festivities in 1909 passed without a single death or injury serious enough to require the attention of a physician. This was due to the fact that the firing and even the sale of fireworks or firecrackers was forbidden within the city limits. The feature of the day was the morning procession of about 3,500 children representing nearly every nationality. Prizes were awarded for costumes and other effects. Chief of Police Kohler estimated that the citizens of Cleveland had saved \$500,000 by the method of celebrating. The children's parade will probably be made an annual event.

Milwaukee, Wis.—Milwaukee, another leader in the "sane Fourth" movement, reported only 22 persons injured during the two days this year, as against one killed and 67 injured in 1908.

New York, N. Y.—Five deaths, 337 injured, 9 of them dangerously, and one so seriously that death seems certain, was the Fourth of July record in New York and Brooklyn. Some improvement in conditions occurred from the fact that no fireworks were allowed to be sold before July 1.

Saratoga, N. Y.—A "noiseless Fourth" was observed in this village, the local ordinance prohibiting the sale and use of explosives being strictly enforced. The annual Fourth of July motor boat regatta was held July 5 on Saratoga Lake with power boats from several nearby cities competing in the races.

Washington, D. C.—The national capital had a "safe and sane" Fourth and it has been voted a huge success. While the youngsters awoke with long-drawn faces at the prospect of a "crackerless" Fourth of July, they found the excitement of the day and the fireworks of the District government satisfying, and the casualty list was eliminated. Those who simply had to have noise went across the Potomac to Alexandria, Va., where there was no muffler. Instead of volleys of firecrackers all over the city, the fireworks were concentrated on the White House lot. It began at dusk with bombshells, sunbursts, fireflies, golden lattice work, ascensions of miniature balloons with search-lights and everything capable of making a "big" noise and producing a scenic effect, and its immensity pleased the small boy. Concentrated fireworks exhibitions took place several times during the day, with a finale at thirty minutes after eight o'clock in the evening, after which Pennsylvania avenue was illuminated with red lights. The crowd seemed as large as that of inauguration night. Not a single accident of any kind due to the celebration of Independence Day has been reported to the Police Department from any place within the District of Columbia, and of two fires which occurred during the night only one of them resulted from the celebration. This is in striking contrast to the record of last year, when 104 were treated at the eight local hospitals on the day of the celebration. There was but one arrest, an Italian, who did not know it was against the police regulations to fire a pistol.

Racine, Wis.—The regulations against the use of fireworks, except under the guidance of experts, were enforced, and despite the fact that there were 15,000 visitors in the city, called together by the home-coming, there was not an accident reported.

Springfield, Mass.—A new record of perfection in the safe and sane observance of Independence Day which has characterized the city for seven years was established this year. There were five main features to the celebration,

every one of which drew its thousands. In the morning there were historical pageants and the parade; in the afternoon, sports at Forest Park and aquatic contests on the Connecticut River, and in the evening the city was illuminated with fireworks. The historical pageants were the unique feature. They represented "Shay's Rebellion," "Escape of John Brown," and "Purchase of Land from Indians by William Pynchon."

#### CITIES WITH DEATH ROLLS

The full effect of the agitation for less noise and more safety is indicated in the following table, including only cities in which fatalities occurred:

	In- Deaths. jured.		In- Deaths. jured.
Appleton, Wis....	1	1	New Milford, Conn. 1 ..
Battle Creek, Mich. 2	..		New York, N. Y. 5 337
Boston, Mass.....	2	65	Philadelphia, Pa. 5 428
Camden, N. J.....	4	1	Pittsburg, Pa..... 2 113
Chicago, Ill.....	1	65	Richmond, Va.... 1 ..
Denver, Col.....	1	4	Salt Lake, Utah. 1 8
Detroit .....	2	84	Sand Point, Idaho. 1 ..
Eau Claire, Wis... 4	1		Seattle, Wash.... 1 ..
Elmira, N. Y..... 2	3		Seymour, Ind.... 1 ..
Goshen, Ind..... 1	..		Spokane, Wash... 1 8
Green Bay, Wis... 1	..		St. Louis, Mo..... 4 205
Hamilton, Ohio... 1	18		Trenton, N. J..... 1 15
Kansas City, Mo. 1	15		Wheeling, W. Va. 1 50
Lanark, Ill..... 1	20		Woonsocket, R. I. 1 10
Louisville, Ky.... 1	11		
Medina, Wis..... 1	..		Total ..... 52 1462

#### Improvements in Oklahoma City

Oklahoma City, Okla.—A large number of public improvements are under way this year and City Engineer W. C. Burke believes that by the end of the year Oklahoma will have more miles of street paving completed than any other city of its size in the world. Among the large improvements are a boulevard from the city to the new plant of the Morris Packing Company. In crossing the North Canadian River a bridge 300 feet in length will be built. The street railway company will have a private right of way 40 feet wide in the middle of the highway and there will be 25-foot paved roadways on each side. The sum of \$400,000 has recently been voted for acquiring rights of way and constructing a boulevard around the city, 26 miles in length. Two thousand acres of land will be purchased for park purposes along the boulevard. The sanitary sewer system will be improved at a cost of \$200,000 for a disposal plant and for extensions. About 35 miles of water mains will be laid at a cost of \$150,000. A new central fire station costing \$100,000 and a jail at \$35,000 will be built. The city now has under contract \$300,000 worth of paving and will let contract soon for about \$350,000 additional.

#### To Enforce Curfew in Omaha

Omaha, Neb.—As the result of a conference between Chief Donahue and Judge Estelle of the Juvenile Court, the curfew ordinance will be strictly enforced and children under 16 years will be kept off the streets after 9 o'clock. A counting of children by Probation Officer Bernstein had something to do with the decision. He found over 400 in one hour after 10:30 passing a certain corner of Douglass street, and all of them well under 16 years.

#### Council Prohibits Use of Tobacco by Minors

Louisville, Ky.—City Council has adopted a drastic ordinance prohibiting the use of tobacco in any form by minors in public places and forbidding anyone to furnish tobacco or cigarettes to minors. The penalty for minors using tobacco is \$10 fine and that of persons furnishing tobacco to minors from \$25 to \$100 fine.

#### Municipal Automobiles to Be Marked

New York, N. Y.—Hereafter all city-owned automobiles are to be prominently marked to show that they belong to the city and are not the property of city officials nor chauffeurs in the employ of the city. Each machine is now to be branded, so to speak, that all may read as the municipal chug-chug cars run. This great stride in the new auto Bertillon or identifying system was made possible when the members of the Board of Aldermen voted favorably on the proposed ordinance of Alderman B. W. B. Brown contemplating the marking of municipal motor cars.

## LEGAL NEWS

### A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

#### Interference with Municipal Authorities—Complaint

Jones et al. vs. Town of North Wilkesboro.—A complaint, in a suit by a citizen and taxpayer of a town to restrain it from purchasing property for a water supply for domestic purposes, which alleges the inability of the town to comply with Revisal 1905, relating to the protection of watersheds, and which sets forth facts showing that it will be impossible to use the water, and that it will endanger the health of the inhabitants, is sufficient to require the town to answer and show that by proper precaution the proposed water supply is either not impure or can be purified, though the complaint does not allege corruption or moral turpitude.—Supreme Court of North Carolina, 64 S. E. R., 866.

#### Use of Streets for Electric Wires

Patapsco Electric Co. vs. Mayor, Etc., of City of Baltimore.—Inasmuch as Code General Laws 1904 and Baltimore City Charter not only make the consent or permission of the city a condition precedent to using its streets and highways for an electric light business, but also authorizing it to charge a fair price for franchises granted for the use of its streets, it has a direct and special pecuniary interest in preventing the unlawful use thereof by an electric company, and may, therefore, resort to injunction for that purpose.—Court of Appeals of Maryland, 72 A. R., 1039.

#### Defective Sidewalk—Instructions

City of Burnside vs. Smith.—Where, in an action against a city for injuries due to a defective sidewalk, the instruction given submitted the question whether the sidewalk was dangerous, and whether its dangerous condition was known, or by ordinary care could have been known, to the city in time to have removed the danger, it was not error to refuse a requested instruction that the city was not required to foresee every possible accident, but was only required to use reasonable care in keeping its sidewalks in a reasonably safe condition, as contained in substance in the instruction given.—Court of Appeals of Kentucky, 119 S. W. R., 744.

#### Sewer—House Connections—Reasonableness of Ordinance

City of Chicago vs. McChesney et al.—An ordinance for the construction of a sewer, providing that one house connection slant shall be placed in said sewer opposite each 25 abutting feet of each lot, piece, or parcel of land, is not unreasonable as failing to except street intersections, as a street intersection is not a parcel of land abutting upon a sewer.—Supreme Court of Illinois, 88 N. E. R., 560.

#### Franchise—Rates

Hester et al. vs. Town of Greenwood et al.—Acts 1905, providing that, where a franchise is granted to a corporation for the construction of a water, light, heat, or power plant, the ordinance shall prescribe the terms and conditions on which the town and its inhabitants may at their option obtain such service, is complied with by a stipulation fixing a maximum rate for the commodity to be furnished.—Supreme Court of Indiana, 88 N. E. R., 498.

#### Defects in Streets—Negligence

Hurley vs. City of Boston.—Although a city, in changing the surface of a street, does so under Statutes 1807, authorizing the abolition of a certain grade crossing, it will be held liable for injuries to travelers along the street, where no order appears to have been made by the proper authorities formally closing the streets to public travel.—Supreme Judicial Court of Massachusetts, 88 N. E. R., 586.

#### Personal Injuries—Notice

Walters vs. City of Ottawa.—A declaration against a city for personal injury is insufficient to support a judgment, where it does not allege that notice of the injury, required by Act of May 13, 1905, was given, nor aver facts from which the giving of notice can be implied. The liability of cities for personal injuries on streets and sidewalks is subject to control by the Legislature, and it may prescribe the conditions upon which cities shall be liable.—Supreme Court of Illinois, 88 N. E. R., 651.

#### Discrimination Between Residents and Non-Residents

District of Columbia, Plaintiff in Error, vs. Alice Brooke.—The distinction between resident and non-resident owners of abutting property in the act of May 19, 1896, creating a drainage system for the District of Columbia, in that the coercion of the law as to making connections with a sewer is by criminal punishment in the case of residents, whereas, against non-resident owners, the District does the work in case of their neglect, and assesses the cost against the property as a tax, does not invalidate the statute for discrimination, even assuming that Congress is forbidden to enact discriminating legislation.—United States Supreme Court, 29 S. R., 560.

#### Courts—Jurisdiction

City of Des Moines, Appellant, vs. Des Moines City Railway Company.—The jurisdiction of a Federal circuit court of a suit by a street railway company to enjoin the enforcement of a municipal ordinance as impairing contract rights cannot be sustained, where such ordinance, after reciting that questions as to the company's rights have been raised, orders it to remove its tracks, and directs the City Solicitor to take action to enforce the city's position, since such direction must contemplate enforcement by suit, and not the forcible removal of the tracks.—United States Supreme Court, 29 S. R., 553.

#### Violation of Police Rule—Dismissal

People ex rel. Stephenson vs. Bingham, Police Commissioner.—Violation by a Captain of Police of Rule 7, paragraph A, of the New York Police Department, providing that each Captain shall frequently visit portions of the precinct at uncertain hours of the day and night, by habitually failing to make inspection between midnight and 8 a. m. and persistently remaining away from his precinct during such hours, was proper ground for dismissal from the force.—New York Supreme Court, 116 N. Y. S., 1041.

#### Cemeteries—Sidewalk Assessment

Gouverneur Village vs. Gouverneur Cemetery Association.—Laws 1879 provide that no land occupied for cemetery purposes shall be sold under execution for any taxes or assessments, nor shall any tax or assessment be imposed thereon. Held, that a rural cemetery association cannot be assessed for a sidewalk along land used by it exclusively for cemetery purposes which have been plotted for burial lots and sold for burial purposes, and the assessment thereon is illegal and void.—New York Supreme Court, 116 N. Y. S., 1107.

#### Defective Street—Railroad's Responsibility

Horton vs. City of Seattle.—In an action against a city for injuries to a pedestrian caused by a defective street, parts of ordinances showing that the street was a public street was admissible, but the parts thereof requiring railroad companies to keep the street in repair, and making such companies liable to the city for injuries on account of defects therein were inadmissible.—Supreme Court of Washington, 101 P. R., 1091.

#### Civil Service Employee—Removal

McCarthy vs. Emerson, Superintendent of Streets.—Statutes 1904, as modified by Statutes 1905, providing that an employee in the classified list of the civil service cannot be removed except for just cause, and that he shall be given a public hearing, when considered in connection with other statutes providing for the removal of officers or employees in the civil service, contemplates a proceeding in the nature of a judicial investigation, and an employee who was not allowed to know anything of the evidence on which charges against him were based, notwithstanding his request therefor, and who was not allowed to be sworn, nor to ask any questions, was not given a hearing, and his removal was unauthorized.—Supreme Judicial Court of Massachusetts, 88 N. E. R., 668.

#### Unlawful Violence—Liability of City

City of Cherryvale vs. Hawman.—Where the members of a charivari party forcibly place a bride and groom in a wagon against their will and draw them up and down the streets, they are engaged in an act of unlawful violence within the meaning of such definition. The fact that they are good natured and intend no serious harm to any one does not absolve the corporation from liability.—Supreme Court of Kansas, 101 P. R., 994.

## NEWS OF THE SOCIETIES

**American Road Congress.**—At the first congress, at Seattle—July 5-9—while the attendance was not large the meetings were considered a success. Mr. E. L. Powers gave a history of road building in the United States, tracing its development from the first attempts of the mound-building Indians to the latest and most improved State roads. To the advent of the bicycle in 1885 he attributes the modern awakening to the necessity for better roads. New Jersey was the first State to put into practical operation the plan for State aid in the improvement of highways. Clifford Richardson read a paper summing up the latest experience in road building. He said, among other things: "To-day we find ourselves, after some experiment, in the position of being able to coat stone, of the type used in macadam surfaces, with an asphalt cement which serves satisfactorily as a binder for such an aggregate, on a metal mixing board with hand labor and shovels, at the point on the road where the material is to be put in place, and with very reasonable economy. It produces a surface which is as far superior to the ordinary tar macadam as the sheet asphalt pavement is superior to one of the tar poultices of 35 years ago. The base of the cementing material must, however, be an asphalt of the best quality, such as is used in the construction of sheet asphalt pavements; in fact, it must be an asphalt paving cement such as is called for under the strictest municipal specifications, but merely made softer by the use of a larger percentage of flux. Dense oils and residuums to which no solid native bitumen has been added will not accomplish the same results to any greater or more satisfactory degree than they would if used in a street pavement."

**American Institute of Chemical Engineers.**—The first semi-annual meeting of the Institute was held in Brooklyn, N. Y., June 24-26. Prof. W. D. Ennis read a paper on "The Limits of Efficiency of the Power Gas Producer." O. R. Zwingenberger presented a paper on "The Utilization of Low Grade Fuels in the United States." S. P. Stadler, president of the Institute, spoke on "Creosote Oil from Water Gas Tar" and contradicted the common belief that it is inferior to the creosote obtained from coal gas tar. Dr. C. F. McKenna discussed an economic problem, "The Centering of Great Industries in the Metropolitan District." J. G. Dean presented a paper on "Methods of Clay Control," referring to the Portland cement industry. Visits were made to the Consolidated Gas Company's works, Astoria, L. I., and the Standard Oil Company's works in Bayonne, N. J., and other plants.

**American Society for Testing Materials.**—Though the youngest of the national engineering societies, the American Society for Testing Materials has at once assumed a prominent position. At the convention at Atlantic City, June 29-July 3, no less than 61 papers and reports were presented. These included new specifications for steel rails, vessel and bridge steel, boiler steel, tires and splice bars; the reports on failures of steel in service; the summary of progress in the Government investigations of fuel and structural materials in the past year; the reports on corrosion and the tests

of preservative coatings; the notes on heat treatment of steel and the papers on mechanical treatment for improving the structure of steel; the details of the tests of steel I beams and girders carried on by Secretary Marbury and of those at Watertown Arsenal by J. E. Howard. Separate sessions were devoted to cement and concrete and to bitumens and oils, and paint interests started a discussion at another session that raised some issues—for example, whether linseed oil may be used in paints for the covering of concrete.

**Connecticut Police Association.**—The annual convention of the State Police Association, which is composed of members of the 22 town and city Police Departments, was held at Hartford July 1, consisting of a business meeting at the Hotel Garde at 10 o'clock a. m., a dinner at the Garde at 1:30, an automobile ride around the city and to Station 18 in East Hartford, where there were sports, music and informal speeches for several hours. Fifty-five delegates, representing practically every department in the State, were present. The Hartford police as hosts of the day were represented by Lieutenant Garrett J. Farrell, who was in charge of arrangements for the reception of the guests, while at the business meeting the Hartford force was represented by Detective Sergeant Frank Santoro and Policemen T. W. Brazel, Edward W. Hayes, A. L. Thomas and W. M. Dower. The business meeting was concerned largely with routine business of the organization, which is chiefly in the nature of a benefit association, matters of internal organization, etc., coming in for discussion, which prolonged the session well into the afternoon. A gold watch and fob was presented by the members of the association to Captain John W. Rogers of Bridgeport, a member of the executive committee and one of the organizers of the association. The president, Chief Henry D. Cowles of New Haven, was in the chair, Captain James J. Landigan of Meriden acting as secretary. The business session closed with the election of the following officers for the coming year, most of them being re-elections: President, Chief H. D. Cowles, New Haven; vice-president, Chief William H. Brennan, Stamford; secretary, Captain James J. Landigan, Meriden; treasurer, Chief William J. Rawlings, New Britain. Executive committee: Captain John H. Redgate, Bridgeport; Chief A. W. Inglis, Middletown; Chief S. C. Wheeler, Winsted; Captain D. W. Bradley, Danbury; Lieutenant G. J. Farrell, Hartford; Captain C. R. Bannon, Waterbury. The dining-room of the Garde was elaborately decorated for the banquet, the tables being covered with what was practically a blanket of roses, while at the corners were favors consisting of perfect imitations of police clubs, which, however, could be unscrewed, displaying a long, thin glass bottle with a long, thin drink. Chief William F. Gunn of the Hartford police was a guest at the dinner, while the Police Commissioners were also invited, but owing to the fact that most of them were out of town were unable to attend. Music was furnished by a string orchestra, but there was no speaking. Shortly before 3 o'clock the delegates took automobiles for a ride through the residential and factory districts of the city, after which the cars were turned to Station 18, East Hartford, where a picnic with informal entertainment closed the day.

**Cuban Society of Engineers.**—Headquarters of the society have recently been established at Pasco de Marti, altos, Havana. Juan Manuel Planas is secretary.

**American Institute of Electrical Engineers.**—The twenty-sixth annual convention of the Institute was held at the Hotel Frontenac, Thousand Islands, N. Y., June 28-July 1. The total registration of members and guests was 265. The program included a total of 36 papers, which had been printed and issued several weeks before, so that they were presented in abstract and most of the time at the sessions was given to the discussions. Seven sessions were held. First, experimental work; second, alternating current motors; third and fourth power transmission and high-tension developments; fifth and sixth, electric motors and miscellaneous points of design; seventh, training of shop men and education of engineers.

In his presidential address L. A. Ferguson, Chicago, Ill., spoke on the "Centralization of Power Supply." He approved the present tendency to centralize the production of electrical energy in a few large plants. He said that, as is the case with most manufactured products, there is economy in production in large quantities. Increased ability to market securities in the case of a large company was another point brought out. By centralization of production and diversity of loading, by combining widely different classes of service, the load factor had been bettered—the ratio of maximum load to average had been made nearer unity and the fixed charges per unit output had been reduced. The necessarily monopolistic nature of the electric supply business was discussed and the belief expressed that the centralizing process would go on and the large combined concerns could secure privileges under reasonable and proper public control.

**Rochester (N. Y.) Chamber of Commerce.**—The legality of a proposed expenditure by the city of \$50,000 for city advertising was discussed at a meeting at which State Senators George L. Meade and Charles L. White, Assemblymen James L. Whitley, Cyrus W. Phillips and Edward H. White, Mayor Edgerton and others were present. Assemblyman Cyrus W. Phillips said that it appeared by a hurried glance at the State constitution that such a grant would be unconstitutional, because the constitution expressly stated that the use of the city funds is "for city purposes" only. Everyone, he said, would not agree that a \$50,000 grant of the city's funds for advertising was for "city purposes." The courts, he held, had never held that advertising was a "city purpose." Assemblyman James L. Whitley said the only way he saw for the city to expend such an amount was through the natural appropriation for a city department of publicity, providing the people would favor the creation of such an office. He did not go on record as favoring such a move himself, however.

**Western Society of Engineers.**—At the last meeting of the society, Chicago, Ill., George Weston, chief engineer of the Board of Supervising Engineers, read a paper on the "Reconstruction of Street Railway Tracks in Chicago." The grooved girder rail is required in all instances and three types of track construction have been developed.

**Ohio Electric Light Association.**—At the fifteenth annual convention, Toledo, July 13-15, the following questions will be discussed:

1. What method should be pursued, in dealing with consumers, by a station changing its frequency from 125 cycles to 60 cycles?

2. In a town of 10,000 inhabitants, or smaller, with a small day load at the station, should the plant consist of three-phase generators with three-phase distribution, three-phase generators with single-phase distribution or single-phase generators with single-phase distribution?

3. In a station of 400-kw. capacity or less, what method should be followed in creating an interest in all the employees favorable to the station?

4. How should the third question be answered in the case of a large city station?

5. What is the best method of installing lightning arresters?

**The National Association of Cement Users.**—Richard L. Humphrey, president, Harrison Building, Philadelphia, announces that its sixth annual convention will be held in Chicago, February 17 to 24, 1910. An exhibition will be held jointly with and under the auspices of the Cement Products Exhibition Company.

**Union of Canadian Municipalities.**—The ninth annual convention, to be held at Medicine Hat and Calgary, Alta., will open Monday, July 26, at 2 p. m., at Medicine Hat, with addresses of welcome by the Lieutenant Governor of Alberta and the Mayor. Following the president's address and the report of the secretary-treasurer and that of the official organ, the "Canadian Municipal Journal," will be reports from the six affiliated provincial unions. In the evening the report of the Committee on Resolutions will be presented, also the report on Uniform Municipal Accounting. Tuesday papers will be presented discussing "Provincial Municipal Boards," "Western Municipal Development" and the "Juvenile Delinquents' Act." On Wednesday the convention will assemble at Calgary and after the election of officers for the coming year papers will be read describing "Government Telephone Systems," "Methods of Street Lighting and Expropriation," "Improvement Plans in Advance of Growth" and "Water Filtration and Sewage Destruction." With the exception of the paper on Juvenile Delinquents' Act and that on Water Filtration, each of these subjects will be discussed by at least three formal papers.

### Calendar of Meetings

July 13-15.

**Ohio Electric Light Association.**—Fifteenth Annual Convention, Toledo, O.—D. L. Gaskill, Secretary, Greenville, O.

July 15-16.

**American Society of Heating and Ventilating Engineers.**—Summer Meeting, Indianapolis, Ind.—W. M. Mackay, Secretary, P. O. Box 1818, New York, N. Y.

July 20-22.

**Texas Mayors' Association.**—Annual Convention, San Angelo.—Mayor F. C. Highsmith, President, Mineral Wells, Tex.

July 20-22.

**Central New York Volunteer Firemen's Association.**—Convention and Tournament, Hornell, N. Y.—James L. Murphy, Secretary, Ithaca, N. Y.

August 3-4.

**Vermont State Firemen's Association.**—Convention and Tournament.—E. D. Moore, Secretary, Bennington, Vt.

August 9-11.

**International Acetylene Association.**—Twelfth Annual Meeting, Hotel Knickerbocker, New York, N. Y.

August 10.

**Connecticut State Fire Chiefs' Association.**—Annual Meeting, New London, Conn.—R. R. Fancher, Secretary, New Haven, Conn.

August 10-11.  
**Connecticut State Firemen's Association.**—Convention, New London, Conn.—R. V. Magee, Secretary, Watertown, Conn.

August 11-13.

**National Firemen's Association.**—Convention, Lansing, Mich.—P. B. McCarty, Secretary, P. O. Box 600, St. Louis, Mo.

August 17-20.

**New York State Firemen's Association.**—Convention and Parade, Poughkeepsie, N. Y.—Thomas Holohan, Secretary, Frankfort, N. Y.

August 17-20.

**International Association of Fire Engineers.**—Annual Convention, Grand Rapids, Mich.—James McFall, Secretary, Roanoke, Va.

August 25-27.

**League of American Municipalities.**—Thirteenth Annual Convention, Montreal, P. Q., Canada.—John MacVicar, Secretary, Des Moines, Ia.

August 25-27.

**Virginia State Firemen's Association.**—Convention and Tournament.—G. C. Cumming, Secretary, Portsmouth, Va.

September 7-10.

**Pacific Coast Association of Fire Chiefs.**—Convention, Seattle, Wash.—W. H. Bringhurst, Secretary, Seattle, Wash.

September 8-10.

**New England Water Works Association.**—Annual Convention, New York City.—Willard Kent, Secretary, Narragansett Pier, R. I.

September 9.

**New Jersey State Firemen's Association.**—Convention, Atlantic City, N. J.—William Exall, Secretary, 86 Bruce street, Newark, N. J.

September 15-17.

**Massachusetts State Firemen's Association.**—Convention, Plymouth, Mass.—D. Arthur Burt, Secretary, Taunton, Mass.

September 29.

**New Hampshire State Firemen's Association.**—Convention, Woodsville, N. H.—George L. Osgood, Secretary, Concord, N. H.

September 29-30.

**Ohio Fire Chiefs' Association.**—Convention, Alliance, O.—D. K. Mosher, Secretary, Warren, O.

October 4.

**American Street and Interurban Railway Association.**—Annual Convention, Denver, Col.

October 5-7.

**Pennsylvania State Firemen's Association.**—Convention, Oil City, Pa.—W. W. Wunder, Secretary, Reading, Pa.

November 9-11.

**American Society of Municipal Improvements.**—Annual Convention, Little Rock, Ark.—A. Prescott Folwell, Secretary, 241 W. 39th St., New York, N. Y.

November 15-19.

**National Municipal League.**—Annual Meeting, Cincinnati, O.—Clinton Rogers Woodruff, Secretary, 705 North American Building, Philadelphia, Pa.

### PERSONALS

ALLEN, LESLIE, City Engineer, Rensselaer, N. Y., has resigned.

ASHBURNER, C. E., Staunton, Va., has been re-elected General Manager for the city.

BARRETT, CHARLES A., Atlanta, Ga., has been elected member of Water Board from the Second Ward, to succeed H. M. Dorsey, resigned.

BLAKENEY, DAVID ELLIOTT, Newburgh, N. Y., Chief of Police, died July 1.

BROYLES, NASH R., City Recorder, of Atlanta, Ga., has been re-elected for two years.

BRAGG, EDWARD W., East Hartford, Conn., has been unanimously re-elected Chief of the Fire Department.

BUCK, HENRY R., 724-7, Connecticut Mutual Bldg., Hartford, Conn., and Paul Sheldon have associated themselves under the firm name of Buck & Sheldon, Incorporated, for the purpose of carrying on and enlarging the engineering practice of Mr. Buck.

CLAPPER, CHESTER C., Syracuse, N. Y., Captain in the Fire Department, died July 7.

CUMMINGS, W. B., Chief of Fire Department of Atlanta, Ga., has been re-elected for two years.

GEARHART, W. S., Springfield, Ill., at present with the Illinois Highway Com-

mission, has been appointed Highway Engineer at the State Agricultural College, Manhattan, Kan., and will have charge of investigations of Kansas highway and bridge problems.

GILL, ISAAC, Pawtucket, R. I., has been elected Commissioner of Public Works, to succeed William H. Barclay.

HAYS, ED. R., Building Inspector of Atlanta, Ga., has been re-elected for two years.

HOSFORD, H. D., Memphis, Tenn., Assistant Engineer in the City Engineer's office, died last week. Previous to entering the city service he had been employed on the Illinois Central R. R., the Yazoo & Mississippi Valley R. R. and the Southern Ry.

IMHOFF, DR. CARL, Essen, Germany, Engineer of the Emscher Drainage Board, is making a tour of American cities for the purpose of studying sewerage and sewage disposal questions.

KENNEDY, J. P., Health Officer of Atlanta, Ga., has been re-elected for two years.

MCDONNELL, ROBERT E., member of the firm of Burns & McDonnell, of Kansas City, Mo., member of the Western Society of Civil Engineers, has gone on a four-months' trip investigating sewage disposal plants and water works systems throughout Germany, France and England. His investigations will be with special reference to the contemplated improvements of this nature in Kansas City, and a report of his investigations will be made to the Kansas City Commercial Club on his return.

MEADOR, CHARLES D., and J. Lawrence Harrison, City Tax Assessors, of Atlanta, Ga., have been re-elected for two years.

MILLER, FRANK, Chief Engineer for the past six years of the Snare & Triest Co., New York City, and E. McLean Long, Civil and Consulting Engineer, 220 Broadway, New York City, have formed a partnership for practice as consulting engineers; in addition to foundations and steel and masonry construction, they will devote their attention to the mechanical equipment of buildings and to the design of land and floating derricks.

O'HARE, OWEN, Kenosha, Wis., Chief of Police, was shot July 5 when making an arrest.

RIDDLESTORFFER, SIDNEY, Perth Amboy, N. J., Edward M. Kelly and Morris Shumsky have been appointed Shade Tree Commissioners.

SAWTELLE, DR. HENRY FENNO, Washington, D. C., has been promoted to Assistant Health Officer; Charles R. Holman has become Chief Inspector and Deputy Health Officer, and T. Nelson Conrad will become Assistant Chief Inspector.

SMITH, MAYOR GEORGE EDWARD, Frederick, Md., has announced the following appointments: City Health Officer, Dr. Ira J. McCurdy; City Attorney, Edward J. Smith; Superintendent of Water Works, George H. Weiner; Water Rent Collector, John J. Biser; City Engineer, Edward L. Titlow; Assistant Engineer, Samuel Albrecht; Market Master, G. William Dansberger; Health Board, Dr. Albert L. Pearre and Dr. Thomas Williamson.

STEGNER, C. M., Cincinnati, O., has been appointed Structural Engineer of the Department of Buildings.

STINE, J. HOWARD, Seattle, Wash., has been appointed Director of Playfields by the Board of Park Commissioners. Mr. Stine completed the four-year course in the Y. M. C. A. training school at Springfield, Mass.

TITLOW, EDWARD L., has been appointed City Engineer of Frederick, Md.

VANDERCOOK, RALPH, Yankton, S. D., has been appointed Assistant State Engineer.

## THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
<b>STREET IMPROVEMENTS</b>				
Indiana.....	Clinton.....	July 15.....	Constructing 250,000 sq. ft. cement sidewalk.....	A. M. Danley, City Engineer.
Illinois.....	Chicago.....	July 15.....	Constructing cement sidewalks on numerous streets.....	C. A. V. Standish, Sec'y Bd. Loc. Imp.
New York.....	Utica.....	July 15, 9 a.m.....	Bldg. Utica parkway, inc. 16,000 sq. yds. bit. macadam, etc.....	W. H. Morton, Sec'y Park Board.
North Carolina.....	Hillsboro.....	July 15.....	Bldg. 8,000 ft. concrete walks; 2,200 ft. macadam st.....	Frank Nash, Mayor.
Ohio.....	Massillon.....	July 15, noon.....	Brick block paving, curb, grading, etc., 7 sts. and 3 alleys.....	Harold Howald, City Engineer.
Ohio.....	Kennedy Hts.....	July 15, noon.....	Macadamizing and laying cement walks, Ridgway and Fern avs.....	O. W. Bennett, Clk. Vil. Council.
Alabama.....	Birmingham.....	July 15.....	Paving streets in business section.....	Maury Nicholson, City Engineer.
Tennessee.....	Elizabethton.....	July 15.....	Macadamizing sts. to cost \$15,000; bldg. \$15,000 sewers.....	E. C. Cass, City Recorder.
Alabama.....	Gadsden.....	July 15.....	Paving and improving 22,000 sq. yds., any material.....	W. M. Wilson, City Engineer.
New York.....	New York.....	July 15, 3 p.m.....	Furn. and delivering 1,000 bbls. emulsion road oil, Prospect Park.....	Henry Smith, Pres. Park Board.
Kansas.....	Ft. Riley.....	July 15, 10 a.m.....	Constructing about 17,000 sq. ft. concrete walks.....	Capt. W. M. Whitman, Q. M.
Wisconsin.....	Oshkosh.....	July 15, 2 p.m.....	Brick paving Main st., cement or stone curb and for grading and paving with cedar block So. Main st.....	Board of Public Works.
Indiana.....	Huntington.....	July 15, 10 a.m.....	Grading, graveling or macadamizing 2 highways.....	John W. Weaver, Co. Auditor.
Wisconsin.....	Beloit.....	July 15.....	Repaving central bridge for city.....	Jos. L. Headley, Chm. Bd. Pub. Wks.
Ohio.....	Youngstown.....	July 15.....	Furn. material and laying and repairing cement and stone walks.....	W. H. McMillin, Clk. Bd. Pub. Serv.
Missouri.....	Kansas City.....	July 16.....	Furn. and erecting complete asphalt paving plant.....	Robt. W. Goodnow, Sec'y Bd. Pub. Wks.
New Hampshire.....	Concord.....	July 16.....	Surfacing portion of main road from Manchester to Portsmouth.....	A. W. Dean, State Engr.
Ohio.....	Cleveland.....	July 16, noon.....	Grading Cedar ave. S.E. 700 ft. long n. N. Y. C. & St. L. Ry.	W. J. Springborn, Pres. Bd. Pub. Serv.
Ohio.....	Colbus Barracks	July 16, 10 a.m.....	Constructing roads, walks, etc., at post.....	Capt. H. J. Hirsch, Constr. Q. M.
Pennsylvania.....	Pittsburg.....	July 16, noon.....	Bldg. road 4.04 miles long Forward twp.; 4.12 miles N. Vers.....	Geo. T. Barnsley, Co. Road Engr.
North Dakota.....	Grand Forks.....	July 16, 10 a.m.....	Grading and repairing 4 miles of County road.....	Hans Anderson, County Auditor.
Indiana.....	Scottsburg.....	July 17, 11 a.m.....	Bldg. 13,195 ft. gravel in Jennings and 10,580 ft. in Johnson township.....	Frank Gardner, County Auditor.
Ohio.....	Orrville.....	July 17, noon.....	Brick paving and curbing 1-2 mile of road.....	Bd. Comrs. Wayne Co., Wooster.
Ohio.....	Ottawa.....	July 17.....	Bldg. Levi Hummon road; 6,774 cu. yds. crushed stone, 27,000 ft. 4 to 8-in. farm tile, etc.....	J. T. Maidlaw, Co. Engr.
Wisconsin.....	Ashland.....	July 17.....	Improving Seventh ave.....	Jas. Phillips, City Engineer.
Ohio.....	Wooster.....	July 17.....	Grading and brick paving, 2,654 ft. of road, Baughman twp; \$6,423.....	J. H. Villard, Chm. County Comrs.
Ohio.....	Mansfield.....	July 17, 1 p.m.....	Bldg. sections of pine road, So. Main st. and Park ave.....	Garric C. Lewis, Clk. Madis. T. Trus.
New Hampshire.....	Concord.....	July 19, 5 p.m.....	Grading and surfacing 2,500 ft. of Merr. Val. rd. in Belmont.....	A. W. Dean, State Engineer.
Minnesota.....	Minneapolis.....	July 19.....	Road building contract No. 9.....	Hugh R. Scott, County Auditor.
Utah.....	Ogden.....	July 19, 2 p.m.....	Asphalt paving, Dist. No. 100, inc. intersections; cost, \$90,000.	A. F. Parker, City Engineer.
Saskatchewan.....	Regina.....	July 19.....	5,000 sq. ft. cement walk, 1,000 ft. curb; 1,225 sq. yds. paving.	Angus Smith, City Engineer.
Kentucky.....	Louisville.....	July 19, noon.....	Creo. wood block paving 7,320 sq. yds., excav., 2,430 cu. yds.; curbing, 1,300 ft. on 3 blocks; cost, \$27,000.....	A. G. Bame, Chm. Bd. Pub. Wks.
Ohio.....	Steubenville.....	July 19, noon.....	Grading, macadamizing, walling, sewerage, etc., 5 sections of turnpike of about 7,500 ft. each.....	County Commissioners.
Pennsylvania.....	Latrobe.....	July 19, 7:30 p.m.....	Grading, curbing, paving, various streets.....	E. M. Eaton, Sec'y of Borough.
New Jersey.....	Hackensack.....	July 19, 8 p.m.....	Macadamizing 110,000 sq. yds., various streets.....	Lemuel Lozier, Engr., Bank Bldg.
Ohio.....	Columbus.....	July 19.....	Paying bridges and approaches; also subway.....	F. M. Sayre, County Auditor.
South Dakota.....	Aberdeen.....	July 19.....	Brick, asphalt and creosoted block paving, several streets.....	F. W. Raymond, City Auditor.
Indiana.....	Bedford.....	July 19, 1 p.m.....	Bldg. 3 macadam roads, 6,920, 10,453 and 13,900 ft. long.....	W. G. Owens, County Auditor.
New Jersey.....	Somerville.....	July 19, 11 a.m.....	Macadamizing 3,600 ft. of road in Warren twp.....	Thos. E. Gibson, Dir. Bd. Freeh ders.
Washington.....	Spokane.....	July 19.....	Grading, curbing, parking, sidewalks, Wall st.....	J. T. O'Brien, Sec'y Bd. Pub. Wks.
Ohio.....	Cincinnati.....	July 19, noon.....	Excav., grading, concrete work, etc., Westwood School.....	C. W. Handman, Bus. Mgr. Bd. Educ.
Delaware.....	Wilmington.....	July 20.....	Bldg. stone road with macadam Amieside or tar surface.....	F. A. Price, State Hwy. Comr.
New York.....	Utica.....	July 20.....	Constructing 61 pieces of sidewalk.....	Sec'y Bd. Contract and Supply.
Ohio.....	Cincinnati.....	July 20.....	Brick paving portions 3 streets and alleys.....	John J. Wenner, Clk. Bd. Pub. Serv.
Ohio.....	Canton.....	July 21.....	Brick paving and grading 1-1/2 miles of road.....	G. L. Sickafoose, County Surveyor.
New York.....	Brooklyn.....	July 21, 11 a.m.....	Paving various streets in Brooklyn.....	Bird S. Coler, Boro President.
New York.....	New York.....	July 22, 3 p.m.....	Asphalt block pavement on bridge over N.Y., N.H. & H.R.R., Bronx.....	Henry Smith, Pres. Park Board.
Ohio.....	Columbus.....	July 23, noon.....	Resurfacing Potter pike, 3,165 ft. long; 1,050 tons crushed limestone; 400 tons screenings; also 3,000 ft. Chillicothe pike; 1,200 tons crushed limestone and 360 tons screenings and 16,000 gals. tarvia X.....	F. M. Sayre, County Auditor.
Ohio.....	Norwalk.....	July 23.....	Improving 1 1/2 miles road at Havana, Norwich twp.....	L. C. Herrick, County Surveyor.
Ohio.....	Cincinnati.....	July 23, noon.....	Treatment of Montgomery pike in 3 townships.....	Fred. Drehs, Clk. County Comrs.
Ohio.....	Findlay.....	July 24, noon.....	Constructing 5 miles of stone pike on Price road, VanB. twp.....	J. W. Montgomery, Chm. Co. Comrs.
Ohio.....	Toledo.....	July 26.....	Repairing 2 stone roads, Providence and Sylvania twps.....	D. T. Davis, Jr. County Auditor.
West Virginia.....	Huntington.....	July 26, 2 p.m.....	Brick paving, curbing, grading, etc., 13th st. and alley.....	John Coon, Comr. Sts. & Sewers.
West Virginia.....	Kenova.....	July 26, 6 p.m.....	Brick or block paving, 28,254 sq. yds. 4-in. concrete; concrete curb and gutter, 19,000 lin. ft. and 1,600 ft. margin curb.....	W. M. Venable, C.E., Charleston.
Ohio.....	Hamilton.....	July 27, 10 a.m.....	Resurfacing High and Main st. bridge with creosoted block.....	J. E. Brate, County Auditor.
Alabama.....	Mobile.....	July 27, noon.....	Creo. wood block paving, 29,500 sq. yds.; cement curb and gutter, 14,600 lin. ft.; grading, etc., on certain sts.....	Wright Smith, Ch. Engr., B. P. W.
New Jersey.....	Hoboken.....	July 28.....	Belgian block paving, grade, gutter, flag, etc., Madison st.....	James H. Londigan, City Clerk.
Ohio.....	Cleveland.....	July 28.....	Improving a portion of Independence road.....	Wm. F. Black, Clk. County Comrs.
Ohio.....	Findlay.....	July 31, noon.....	Bldg. 5 miles stone pike on Krout road, Delaware twp.....	J. W. Montgomery, Chm. Co. Comrs.
Texas.....	Galveston.....	July 31, noon.....	Brick paving, concrete curbing and sidewalks, Ft. Crockett.....	Capt. John C. Oakes, U. S. Engr.
New Jersey.....	Morristown.....	Aug. 2.....	Macadamizing 3 roads for county.....	Gustave A. Becker, Dir. Freeholders.
Indiana.....	Danville.....	Aug. 2, 10 a.m.....	Bldg. 6,792 ft. gravel road on White road, Canton twp.....	Wm. H. Nichol, County Auditor.
North Carolina.....	Goldsboro.....	Aug. 2.....	Concrete sidewalks, 60,000 sq. ft.; \$150,000 bond issue.....	D. J. Broadhurst, City Clerk.
Idaho.....	Boise City.....	Aug. 2, noon.....	Constructing concrete pavement, etc., in Paving Dist. No. 12, per Ordinance No. 841; check, \$1,000; bond, \$10,000.....	D. D. Williams, Pres. Bd. Pub. Wks.
Indiana.....	Hartford City.....	Aug. 3, 1 p.m.....	Grading, draining, limestone paving, 35,775 lin. ft. road.....	W. Lea Smith, Auditor, Jay County.
New Jersey.....	Atlantic City.....	Aug. 4.....	Grading and macadamizing shore road at Absecon to N. J. ave., Somers Point.....	E. D. Rightmire, County Engr.
<b>SEWERAGE</b>				
New Jersey.....	Newark.....	July 15, 3:30 p.m.....	Bldg. Passaic ave. sewer and branches; 1,010 ft. 24-in. rein. concrete pipe sewer; 315 ft. 18-in. ds. 210 ft. 12 in., 690 ft. 10-in. vit. pipe, 1,850 ft. 6-in. pipe; 14 manholes, 5 basins, etc., Constructing sewers; plans by F. W. Sears, C. E.....	M. R. Sherrerd, C. E., St. & Wtr. Bd.
Illinois.....	Prophetstown.....	July 15.....	Bldg. \$15,000 sewer system; macadam paving, \$15,000.....	D. L. Woodward, City Clerk.
Tennessee.....	Elizabethton.....	July 15.....	Bldg. 19th st. sewer, Cont. 46; 2,770 ft. pipe and concrete sewer, 20-33-in. diam. in 6-12 ft. trench, inc. 325 cu. yds. concrete.....	E. C. Cass, City Recorder.
Indiana.....	Kokomo.....	July 16, 10 a.m.....	Extending Danner sewer to Crawford extension.....	J. B. F. Breed, Ch. Engr. Sew. Com.
New Jersey.....	Fort Hancock.....	July 16.....	Bldg. sewer outlet at Fort Hancock.....	Board of Public Works.
New York.....	Buffalo.....	July 16.....	Bldg. 10 and 12-in. tile sewer in portion of Doat st.....	Lt. W. J. Hawkins, O. M.
Missouri.....	Liberty.....	July 16, 3 p.m.....	Bldg. sewers and appurtenances in Dists. 1, 2, 3, 4; cost, \$23,000	F. G. Ward, Comr. Pub. Wks.
Oklahoma.....	Newkirk.....	July 16.....	Material and labor for bldg. 8 miles 8-15-in. sanitary sewer system and 1 septic tank; M. A. Earl & Co., Engrs., Muskogee	E. H. Collins, City Engineer.
				E. G. Davis, City Clerk.

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
<b>SEWERAGE—Continued</b>				
Ohio.....	Oxford.....	July 17, noon.....	Furn. material and laying sewerage connections, Miami Univ.....	Bd. Trustees, Miami University.
New York.....	New Bright'n, S.I.	July 19.....	Bldg. temporary sewers, inc. combined sewer in Broad st., etc., \$36,000 security; sanitary and storm sewer, Canal st., etc.; \$40,000 security.....	
Oklahoma.....	Oklahoma City.....	July 19.....	Bldg. lateral sewer in 2 additions and in other blocks.....	
Alabama.....	Montgomery.....	July 19.....	Constructing sanitary sewers in portions of 4 sts. and 1 ave.....	Geo. Cromwell, Boro. President.
Indiana.....	Snellville.....	July 20, 6 p.m.....	Bldg. sanitary trunk sewer system.....	Bob Parman, City Clerk.
Minnesota.....	Virginia.....	July 20, 8 p.m.....	Constructing sanitary sewer in District No. 34.....	A. R. Gilchrist, City Engineer.
California.....	Oakland.....	July 21, 11 a.m.....	Bldg. intercept. and storm sewer and extending culvert, \$10,000	Harry J. Clark, City Clerk.
Indiana.....	Indianapolis.....	July 22.....	Constructing sewers, etc., for hospital near Rockville.....	Albert Bickford, City Clerk.
Kentucky.....	Louisville.....	July 23, noon.....	Bldg. Sec. D, N. W. Sewer, Cont. 48; 4,320 ft. rein. concrete sewer, 6 ft. and 6 ft. 3 inches in 18 to 21-ft. trench, inc. 2,350 cu. yds. concrete and 259,000 lbs. of steel; H. P. Eddy, Boston, Mass., C.E.....	W. B. Fawcett, Sec'y Bd. Pub. Wks. Tuberculosis Hosp. Commission.
Utah.....	Logan.....	July 23.....	Constructing sewers to cost \$50,000 for city.....	
Pennsylvania.....	Silverly.....	July 24.....	Constructing storm and sanitary sewer system.....	W. C. Nones, Chm. Sewer Com.
New Jersey.....	Atlantic City.....	July 26.....	Bldg. portion of storm water drainage system; 76,650 ft. brick, brick and rein. concrete and terra cotta drains from 10-in. to 8-ft. with manholes, catch basins and inlets; \$5,000 bond, plans, \$10 of T. Chalkley Hatton, Cons. Engr., Wilmington, Del.	A. F. Parker, Ogden, Con. Engr.
Ohio.....	Columbus.....	July 26, 9 a.m.....	Bldg. sewers and drains in Ohio State University grounds.....	E. H. Pierce, C.E., Chambers Bldg., Oil City.
Ohio.....	Port Clinton.....	July 26.....	Mat. and labor for bldg. sewers Dist. No. 1; separate bids.....	
Alabama.....	Mobile.....	July 27, noon.....	Mat. and labor for bldg. 11,600 ft. 30-10-in. pipe sewers; 5,000 ft. 6-in. house connections, manholes, catch basins, etc.....	
New Jersey.....	Hoboken.....	July 28.....	Bldg. brick sewer, 6-in. house connections, pav., etc., Madison st.	E. D. Rightmire, City Engineer.
South Dakota.....	Mitchell.....	July 29.....	Constructing sewers for city; John L. Nelson, City Engr.....	Carl E. Steeb, Secy. State Univ. Trus.
Kansas.....	Kingman.....	Aug. 2.....	Constructing sewers in District No. 1.....	J. J. Huber, Village Clerk.
Louisiana.....	Ft. St. Philip.....	Aug. 2.....	Constructing sewer and water systems.....	Wright Smith, C.E., Bd. Pub. Wks.
Arkansas.....	Monticello.....	Aug. 3, 10 a.m.....	Seven miles of 8 to 12-in. pipe sewers with 2 purif. plants.....	James H. Londigan, City Clerk.
Oklahoma.....	Chandler.....	Aug. 3.....	Constructing sewer system; \$25,000 bonds available.....	L. L. Ness, City Auditor.
Kentucky.....	Hopkinsville.....	Aug. 3.....	Bldg. septic tank at Western Ky. Asylum for Insane.....	B. H. Welch, City Clerk.
<b>WATER SUPPLY</b>				
Kansas.....	Osage City.....	July 15.....	Constructing water works plant to cost \$8,000.....	
Ohio.....	Delta.....	July 15, noon.....	Bldg. municipal water plant with deep wells as source of supply and 5 1-3 miles 4-10-in. c. i. pipe; Riggs and Sherman Co., Engrs., 613 The Nasby Bldg., Toledo.....	W. C. Hoch, Clk. Bd. Pub. Affrs.
Kentucky.....	Newport.....	July 15, noon.....	Furn. material and labor for 5,000,000-gal. vert. high-duty pump, engine, laying 13,050 ft. 20-in. c. i. pipe, inc. specials, etc., steel stand pipe on steel-braced tower; John W. Hill & Sons, Engrs., First National Bank Bldg., Cincinnati, Ohio.....	
Colorado.....	Fort Collins.....	July 16, noon.....	Bldg. 4,000,000-gal. slow sand or mechanical filtration plant.....	
Ohio.....	Pleasant Hill.....	July 17.....	Constructing water works system; A. C. Reed, Civil Engineer.....	
Virginia.....	Pulaski.....	July 17, noon.....	Bldg. water works; rein. concrete dam, inc. 750 cu. yds. concrete and 20 tons reinforcement, 15,000 ft. 12-in. c. i. mains, etc.....	
Saskatchewan.....	Regina.....	July 19.....	Furn. 22,800 ft. 18-in.; 7,350 ft. 6-in. c. i. pipe and castings; gate valves and boxes; 12 tons lead pipe, 30 tons soft lead; 200 curb boxes; Angus Smith, City Engineer.....	
California.....	Madera.....	July 19.....	Bldg. complete municipal water supply system.....	
Dist. Columbia.....	Washington.....	July 19.....	Furn. machinery for central pumping station and 3 pumping units for hydraulic excavating and sluicing, including pumps and motors, engines, boilers, etc.....	
Utah.....	Salt Lake City.....	July 19.....	Bldg. North Temple st. aqueduct across 3 streets.....	
New York.....	New York.....	July 20, 11 a.m.....	Furn. two 12,500,000 steam turbo-turbine pumps, two 225 h.p. water tube boilers and all accessories at Jerome ave. pump sta.....	Purchasing Agt., Isthmian Can. Com.
Georgia.....	Moultrie.....	July 20.....	Furn. f.o.b. cars; 429 tons, 10, 6 and 3-in. c. i. pipe, 10 tons specials, 46 hydrants, 34 valves and boxes, one horiz. comp. duplex pump eng., and 1 steel or rein. conc. tower and tank.....	L. C. Kelsey, City Engineer.
New York.....	Mt. Morris.....	July 22, 8:30 p.m.....	Constructing water works, inc. pump. sta., 75 hydrants, etc.....	Board of Water Supply.
Colorado.....	Ft. Logan.....	July 22.....	Bldg. addition to water distributing system.....	
New Jersey.....	Burlington.....	July 26, 3 p.m.....	Bldg. 3,000,000-gal. gravity filtration plant of concrete.....	
Rhode Island.....	Providence.....	July 27, 2:15 p.m.....	Furn. and erect. complete 10,000,000-gal. pumping engine.....	
Kansas.....	Osage City.....	July 27.....	Constructing water works; Burns & McDonnell, Engrs.....	
Arkansas.....	Clarendon.....	Aug. 2, 2 p.m.....	Driving an 8-in. artesian well; C. H. Jenks, C.E.....	
Louisiana.....	Ft. St. Philip.....	Aug. 2.....	Constructing water works and a sewer system, inc. trestle and steel tank and concrete reservoir.....	
Washington.....	Sunnyside.....	Aug. 16, 2 p.m.....	Constructing surplus creek waterway channel and structures near Sunnyside, inc. excav. and lining one mile of channel; excav. 13,300 cu. yds. and placing 2,100 cu. yds. concrete and 130 cu. yds. paving.....	
<b>BRIDGES</b>				
South Dakota.....	Yankton.....	July 15, 8 p.m.....	Material and labor for bldg. steel reinforced concrete bridge over Creek at Burleigh st.; 36 ft. long, 18 ft. rdway, two 6 ft. walks. Erecting concrete bridges over creeks, Wildwood and Barr twps. Bldg. steel bridge, also concrete bridge.....	
Pennsylvania.....	Johnstown.....	July 15, 2 p.m.....	Removing draw bridge to new channel of Nooksack river at Marietta, bldg. wing dams, approaches, etc.; also new pile bridge in place of drawbridge over old channel.....	
Ohio.....	Lorain.....	July 15.....	Removing hwy. bridge over creek and bldg. new conc. steel bridge	
Washington.....	Bellingham.....	July 16, 2 p.m.....	Bldg. concrete abutments and retaining walls and repairing bridge.....	
Ohio.....	Cleveland.....	July 16.....	Bldg. rein. concrete culvert on Furnace rd. nr. E. Conneaut.....	
Ohio.....	Coshocton.....	July 17, noon.....	Filling in pile highway bridge over Wisconsin Channel.....	
Pennsylvania.....	Union City.....	July 18, 8 p.m.....	Bldg. bridges over Murphy and Smith creeks.....	
Ohio.....	Jefferson.....	July 19.....	Bldg. rein. concrete arch bridge making fill. and approaches over Tuscarawas river, Warwick twp.; cost, \$35,298.....	
Minnesota.....	Red Wing.....	July 19, 7:30 p.m.....	Extending substructure of bridge, raising and pav. surface, etc. Bldg. rein. concrete arch viaduct; 2 abut. and 6 piers, supporting 7 spans 969 ft. long, 70 ft. wide; 465 found. piles, 283 tons steel reinforcing, 14 trusses, 585 ft. long, 18,240 cu. yds. concrete, 1,199 sq. yds. concrete surface, 18,260 cu. yds. arch filling.....	
California.....	San Jose.....	July 19, 11 a.m.....	Iron or steel bridge to span Wills Creek, Byesville, masonry sub. Bldg. 95 ft. span steel bridge, also 40-ft. span bridge.....	
Ohio.....	New Philadelphia	July 19.....	Furnishing fabricating and delivering at Col. rr. common points, at price per lb. all superstructures to Jan. 1, 1911.....	
Ohio.....	Columbus.....	July 19.....	Bldg. 2 double-track, 3-span steel plate girder bridges on conc. abutments and piers, one 80 ft. long, one 3-track; also one rein. concrete hwy. bridge, 70 ft. wide, Schedule A; cost, \$300,000. Bldg. r.r. bridge of 3 plate girders, each 75 ft. span, with concrete piers and abutments, etc., at State University.....	
California.....	Los Angeles.....	July 19.....	Bldg. 3 concrete bridges and one concrete viaduct.....	
Ohio.....	Cambridge.....	July 20, 11 a.m.....	Bldg. pile foundation for culvert at sta. 152, Col. twp.....	
Pennsylvania.....	Kittanning.....	July 20, noon.....	Bldg. bridge near residence of J. A. Armstrong, Berlin twp.....	
Colorado.....	Denver.....	July 21, noon.....		
Pennsylvania.....	Philadelphia.....	July 21, noon.....		
Ohio.....	Columbus.....	July 21, noon.....		
Ohio.....	Cleveland.....	July 21, 11 a.m.....		
Ohio.....	Cincinnati.....	July 23, noon.....		
Ohio.....	Youngstown.....	July 26, 11 a.m.....		

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
BRIDGES—Continued				
Missouri.....	St. Louis.....	July 27.....	Bldg. 4 piers of city free bridge; stone and granite or all granite for facing, with concrete inside; foundation work, 349 cu. yds.; caisson work, 21,140 cu. yds.; masonry, 16,679 cu. yds., and granite surface for superstructure and upstream facing, 10,132 cu. ft.; cost, \$520,000; bridge to be double-decked structure with main spans 2,000 ft. long; total cost, inc. approaches, \$3,200,000; plans by Isoller & Hodge, Cons. Engrs., 149 Broadway, N. Y. City.....	Max Reber, Pres. Bd. Pub. Imp. E. E. Greenwood, Skowbegan. Fred. Drehs, Clk. County Comrs. Board of Park Commissioners.
Maine.....	Clinton.....	July 27, noon.....	Bldg. bridge 600 ft. long in 3 spans; sub. and super. separate. Repairing bridge on Spring Grove ave., Millcreek twp., Spec. 917	
Ohio.....	Cincinnati.....	July 28.....	Furn. designs, detail plans, etc., for several bridges; 3 prizes.....	
Minnesota.....	Minneapolis.....	Sept. 1.....		
LIGHTING AND ELECTRICITY				
Ohio.....	Rathbone.....	July 16, 1 p.m.....	Furn. and erecting electrical machinery, wiring, conduits, etc., changes and additions in steam-heating, piping, trenching and conduits, Girls' Industrial Home.....	T. F. Dye, Sec'y. Trus. Indus. Home
Missouri.....	Clinton.....	July 17.....	Furn. and del. for 1 yr. elec. wattmeters and transformers.....	J. H. Kyle, Chm. Bd. Pub. Wks.
Texas.....	Greenville.....	July 19.....	Machinery for improving electric light plant to operate in con. with water works; bldg. \$6,000 power house.....	W. A. Frazer, City Clerk. John Hirning, Sec'y Capitol Com.
South Dakota.....	Pierre.....	July 28.....	Furn. and install. elec. fixtures at new Capitol bldg.....	
Kentucky.....	Cynthiana.....	Aug. 2, noon.....	Lighting sts., alleys and public places for 6 or 10 yrs. from Apr. 1, 1910, with 40 or more arcs or 90 or more 40 c.-p. incandescents; light for all and every night or dark nights only; further information of W. W. Van Deren.....	
Manitoba.....	Winnipeg.....	Aug. 2, 11 a.m.....	Bldg. and erecting hydraulic, electric and auxiliary equipment of municipal generating station on Winnipeg River.....	
Manitoba.....	Winnipeg.....	Aug. 16.....	Five 3,000 k.w. generators, two 250 k.w. generators, etc.; six step-up transformers; light, heat, and power systems; protective apparatus; 3 electric traveling cranes; auxiliary apparatus Smith, Kerr & Chace, Engrs., Toronto, Ont.....	
MISCELLANEOUS				
Ohio.....	Columbus.....	July 15, noon.....	Bldg. concrete retaining wall, Contract No. 18, inc. 800 cu. yds. excav., 765 cu. yds. loam, 1 acre seeding, 220 sq. yds. sodding, 800 cu. yds. concrete, 2,000 lbs. twisted steel rods.....	
Ohio.....	Coshocton.....	July 17, noon.....	Bldg. a township house for New Castle twp. in Walhonding....	E. W. Hirsch, Sec'y. Bd. Pub. Serv.
Texas.....	Houston.....	July 19, noon.....	Cont. 5; graduation of sect. of Terminal yards, 50,000 cu. yds.; No. 6; graduation of slips, etc., 150,000 cu. yds. grading; No. 7; bldg. 2,720 lin. ft. timber bulkhead, piling, etc.; dredging out slips, 20 ft. below mean low tide, 240,000 cu. yds.; deposits: \$400, \$1,200, \$2,000 and \$2,150.....	F. H. Gamble, Clk. New Castle Twp.
Illinois.....	Willmette.....	July 21.....	Dredging and dock work on Lake Michigan Shore, inc. dredging 26,000 cu. yds. and bldg. 1,500 lin. ft. piles and stone fill. dock 400 lin. ft. of timber dock for Chicago Sanitary District.....	H. B. Rice, Mayor
Ohio.....	Columbus.....	July 21, noon.....	Bldg. rr. 1 1/4 miles long, rr. bridge of 3 deck plate girders, each 75 ft. span, concrete piers and abutments; bldg. equipment of Vet. Clinic, Bldg. at State University.....	I. J. Bryan, Clk. Sanitary Dist. of Chicago, American Bldg., Chicago.
North Carolina. Wilmington.....	July 22.....		Rebldg. 4th size Silsby engine and furn. her. with new boiler.....	
New Brunswick. Moncton.....	July 22.....		Bldg. extension to wharf at Moncton.....	
New Jersey. Hoboken.....	July 28, 4 p.m.....		Removal of ashes, garbage, rubbish, street sweepings, etc., from all houses every day, except Sunday, for one year, begin. Sept. 25; bids with \$1,000 check and \$10,000 bond.....	
Uruguay, S. A. Montevideo.....	July 28.....		Furn. 2,400 canvas uniforms, for city police; 2,400 pairs leggings, 4,000 blouses for rural police; and 3,200 summer helmets, as per specifications, Cuarcim No. 254.....	
Illinois.....	Chicago.....	Sept. 15.....	Furn. voting machines up to \$400,000 value.....	

## STREET IMPROVEMENTS

**Birmingham, Ala.**—The Board of Revenue has appropriated \$10,000 to be used in cutting through Red Mountain, according to the plans that have been prepared by the Birmingham and Shades Valley Street Car Co.

**Dadeville, Ala.**—City has decided to construct 4,000 sq. yds. cement sidewalk and 3,000 yds. macadam pavement.—C. H. Ohme, Birmingham, Engineer; J. B. Rylance, Mayor.

**Dothan, Ala.**—J. B. McCrary & Co., Consulting Engineers, Atlanta, Ga., will prepare plans for \$60,000 worth of street, sewer and water improvements.

**Mobile, Ala.**—The Board of Public Works has instructed Engineer Smith to draw up plans and specifications for the permanent paving and drainage of South Conception st. to the Mobile, Jackson and Kansas City depot, and pending the permanent improvements to put the street in as good condition as possible; Board also outlined a drainage scheme for the northwestern portion of the city, including the paving of Broad st. from Spring Hill ave. to Charleston; Spring Hill ave. west to Julia st.; Congress st. from Broad st. to the river; Davis ave. to One-mile creek bridge, and all streets intermediate between State and Congress from Franklin st. east to the river.

**Selma, Ala.**—City has had plans prepared for the paving of Lauderdale st., about 20,000 sq. yds. with wood block, asphalt or mineral rubber.

**Marianna, Ark.**—Paving Improvement District No. 1 will pave 3,500 lin. ft. of street with vitrified brick or other material; cost \$35,000.—J. E. Stevenson, E. J. Beasley and R. L. Mixon, Commissioners.

**Alameda, Cal.**—Steps will be taken by Council to widen Encinal ave., between Broadway and Versailles ave., to a width of 89 ft., if the recommendations of the Committee of the Whole are adopted.

**Oakland, Cal.**—The West Oakland Improvement Club is urging the bituminizing of 16th st. from the depot to Market st.

**Pasadena, Cal.**—Council is considering the following: Ordinance establishing grades on Holliston ave. and Wilson ave.; resolutions of intention to do work on Union st., Marengo to Skillen alley, oiling; Flower st., Marengo to Los Robles, oiling; Chester ave., Colorado st. northward, grade, oil, curb and gutter; India st., Marengo to Los Robles, oiling; Ritzman st., Fair Oaks to Broadway, oiled Macadam paving; Boylston st., Lake to Mentor, oiling; Winona ave., Walnut to Orange Grove, oiling; Dearborn, Summit to Marengo, oiling; Wright ave., Mountain to Elmira, grade, oil, curb, gutter; resolution ordering work on Peoria st.; ordinance ordering extension of Maple way; resolution ordering work on Summit ave., Mentor ave., Oak Knoll ave. and other streets.

**Roseville, Cal.**—County Supervisor Williamson has been in this city several times looking over the situation as regards the county roads leading out of Roseville; roads have been neglected until they are simply impossible in the winter time, and almost so in dry weather; he proposes to have the County Surveyor put the road to Rocklin, the road to Lincoln and the one toward Folsom on somewhat of a water grade, and grade them up so they will shed water during the wet season, provide culverts where needed, and put these roads in first-class shape and on a permanent basis.

**Hartford, Conn.**—The State Highway Commissioner has received plans for State road work as follows: From Engineer F. H. Oldershaw, 3,900 lin. ft. on West Main st., New Britain; from C. H. Olmsted, 6,600 lin. ft. on Main st., East Hartford; from McElroy & Kershaw, 6,300 lin. ft. on the Bridgeport and Newtown Turnpike in the towns of Trumbull and Monroe.

**Hartford, Conn.**—The Senate has passed in concurrence with the House a resolution authorizing New Haven to issue \$100,000 worth of paving bonds.

**Washington, D. C.**—Engineer Commissioner Judson has ordered the following road improvements: The east roadway of Wisconsin ave. northwest, between Wood-

ley road and Macomb st.; Warder st. north of Newton place; Newton place, between Warder st. and Park place; Irving st. northwest from Georgia ave. to Warder place; Belmont st. northwest, between 15th and 17th sts., and 17th st. north from Crescent place.

**Washington, D. C.**—The Commissioners have ordered that Cool Spring road between 19th and C sts. N. E. to Bennings road and 21st st. N. E. between B and D sts. be graded; also that curb, gutters and sidewalk of Florida ave. N. W. between 16th and 17th sts. be brought to grade at a cost of \$300.

**Bradenton, Fla.**—Citizens have voted \$250,000 bonds for paving; material not yet selected.

**Winter Park, Fla.**—Citizens have voted \$3,000 street improvement bonds.

**Griffin, Ga.**—City has selected E. H. Davis, city, and H. D. Cutter, Macon, as engineers for street paving; \$75,000 is available.—Hazelhurst & Anderson, Consulting Engineers.

**Aurora, Ill.**—Council has adopted resolutions for constructing cement walks.

**Bushnell, Ill.**—Bids will be received about Aug. 1 for 11,888 sq. yds. brick; cost, about \$27,000.—E. A. Pratt, Engineer.

**Peoria, Ill.**—The Board of Local Improvements has decided to go ahead with the improvement of South 4th st.; thoroughfare will be paved with brick with a filler of asphalt, on a concrete base.

**Waukegan, Ill.**—The Board of Local Improvements is considering the paving of Belvidere st. with brick.

**Elkhart, Ind.**—The Board of Public Works is receiving bids for the paving of Prairie st., from Main st. to Luster ave., with macadam 8 ins. thick and 6 ins. at the curb; also West Franklin st., from Marion st. to Indiana ave., with asphalt.—E. L. Arnol, Chairman.

**Hammond, Ind.**—City is considering construction of a 5-ft. cement sidewalk on Logan st., between Calumet and Columbia

**Huntington, Ind.**—City will construct a 4-ft. cement sidewalk on both sides of Canfield st. from Division to Freedom st.—J. C. Bieber, City Clerk.

**Indianapolis, Ind.**—The Board of Works has confirmed the following improvement resolutions: First alley north of Michigan st., from Capitol ave. to Senate ave., paved; Locke st., from Indiana ave. to Walnut st., paved; Randolph st., from Washington to Michigan st., combined curb and gutter; Hoefgen st., from Shelby st. to second alley east of Shelby st., cement walks and curb; local sewer in the alley east of Laurel st., from Orange st. to first alley south of Prospect st.; First alley northeast of Virginia ave., from McCarty st. to Bradshaw st.; Delaware st., from 30th to 32d sts., paved; also Ruckle st., from 33d to 34th sts., paved. Board ordered plans for improving Lowell ave., from Hawthorne line to Arlington ave., and New st., from Raymond st. to La Grande ave.

**Indianapolis, Ind.**—The Board of Works is considering the following improvement resolutions: Bradley st., from Washington to Michigan sts., permanent pavement modified to include bitu mass in specified materials; Washington boulevard, from 30th to 32d sts., permanent pavement, confirmed; Georgia st., from East to Noble st., permanent pavement, confirmed; Vermont st., from East to Noble sts., permanent pavement, confirmed; 16th st., from first alley east of College ave. to Belfontaine st., cement walks, confirmed; first alley east of Barth ave., from Palmer st. to Cottage ave., local sewer, confirmed; first alley east of Shelby st., from 381 ft. north of Cottage ave., 260 ft. south of second alley, south of Cottage ave., local sewer, confirmed; Orange st., from Shelby st. to Kinggold ave., local sewer, confirmed, and Orange st. and alley east of Shelby st., from first alley south of Prospect st. to 400 ft. south of the center of Orange st., local sewer, confirmed.

**Indianapolis, Ind.**—The Board of Appraisers in connection with the proposal to open Broadway from Massachusetts ave. to St. Clair st. filed estimate that cost of the necessary 50-ft. frontage in St. Clair st. would be \$6,500 and of the 68-ft. frontage necessary in Massachusetts ave. \$16,000, making a total estimate of \$22,500. To this, they added the estimate of the cost of paving the new street and making sidewalks.

**South Bend, Ind.**—A petition has been presented to the Board of Public Works for brick pavement on Hydraulic ave. and on East Madison st. from La Salle ave. to Eddy st.

**Atlanta, Ga.**—City is considering the laying of brick paving, at an estimated cost of \$95,000. The Iowa Engineering Co., Clinton, Engineers.

**Atchison, Kan.**—Plans are being prepared by City Engineer S. K. McCrary for brick paving in various streets.—C. T. Hawk, City Clerk; S. K. McCrary, City Engineer.

**Leavenworth, Kan.**—The City Commissioners are considering plans and specifications for paving Santa Fe st.; also ordinance for new sidewalks from Main to 3d st.; estimates will be prepared for a culvert on Columbia ave. and the grading of the avenue south of Spruce st.

**Leavenworth, Kan.**—Plans have been prepared by City Engineer Joseph O'Neill for six blocks of brick paving on Ottawa st.—J. H. Kirmeyer, City Clerk.

**Lexington, Ky.**—City will lay cement walks on both sides of Dewees st. from Main to 3d sts.; North Limestone will also be sidewalked where proper ones do not now exist.

**Baton Rouge, La.**—The State Board of Engineers will soon have a corps of engineers under the field direction of Joe Monget, making a survey of the proposed Claygut road, which has been selected as the route for the building of the first link in the Baton Rouge-New Orleans model good road; Chief Engineer Keer has estimated that it will take about two weeks to make the survey and complete the plans for the road; when these plans are completed copies will be presented to the Governor and the police jury; plans will call for three different characters of roads, a model good road, which is the one the parish now intends to build, an object lesson road, and a plain dirt road; a model good road will call for the use of some material for the entire distance; second plan will call for material used a portion of the distance, and the third road will simply be a dirt road, built on scientific principles; along with these three different plans the State Board of Engineers will furnish an estimate of the cost of the construction of the three different roads, and it will then be a matter of finance for the police jury.

**New Orleans, La.**—Council is considering the paving of Erato from Carondelet to Magnolia and briquetting Teche st. from Opelousas to the Jefferson line.

**Baltimore, Md.**—There is a well-developed movement in Baltimore county for a system of good roads that is as important to Baltimore city as it is to the people of the county; proposition is entirely distinct from the good roads plans that are being backed by the State Commission, but the improvements may be a valuable accessory to the modern highways that are to be built in Baltimore county by the State; plan, in brief, is to spend \$1,500,000 in building a system of good roads that, besides furnishing facilities for speedy and easy hauling from every section, will bring the whole county into closer contact and more profitable business relations with the city.

**Bay City, Mich.**—The Board of Public Works has decided to recommend to the Council the paving of Water st. from 6th st. to McKinley ave.; Water st., from Columbus to Lafayette ave., and Ohio st., from Litchfield court to Euclid ave.

**Detroit, Mich.**—Council has directed the Department of Public Works to advertise for proposals for paving 2d ave. from Euclid to Longfellow ave., with cedar blocks on concrete foundation, with Medina, Berea or other approved curbing; cost \$21,714; also for paving two alleys with vitrified brick, on concrete; cost, \$3,000 each.—J. J. Haarer, Commissioner.

**Kimball, Mich.**—All bids opened for materials and grading, draining, culverting and macadamizing 10 miles of road have been rejected.—Wilford Tomlinson, Commissioner of Highways.

**Alexandria, Minn.**—Council has ordered an artificial stone sidewalk on 6th ave.; a resolution ordering all new sidewalks to be of artificial stone has been passed.

**Leland, Miss.**—City has decided to lay concrete sidewalks on principal streets.

**Vicksburg, Miss.**—City will let contract within next 30 days for paving of Cherry st.; cost \$125,000; \$50,000 will be expended for laying uniform sidewalks.

**Asbury Park, N. J.**—Neptune Township, with the assistance of the State, will expend about \$7,000 for macadamizing Main st.

**Hoboken, N. J.**—Bids will be received July 28, 4 p. m., for \$125,000 repavement bonds.—J. H. Londrigan, City Clerk.

**Jersey City, N. J.**—The Street and Water Board has voted to ask the Board of Finance for \$640 to pay for the proposed asphalting of Harrison ave., from Bergen to Monticello aven.

**Morristown, N. J.**—The Street Committee will advertise for bids for the paving of Washington st.

**Newark, N. J.**—In order not to lose sight of certain much-needed street improvements and to reserve sufficient funds for the purpose, the Board of Works has made a general survey of its plans for the near future with a view to ascertaining just what can be accomplished during the current year; among the more important projects discussed was the repaving of Market and Broad sts.; the widening of the latter thoroughfare, from Park place to a point south of Trinity Church; the opening of Lawrence st. under the Central Railroad tracks, and the bridging of the tracks at Berlin st.

**Ocean City, N. J.**—A much-needed improvement is planned by the Cape May County Board of Freeholders, which has decided to secure 20 additional feet of roadway for the Ocean City turnpike, from 34th st., this city, to Seaside road, on the mainland; if the additional land is secured the turnpike will be widened and raised above tidewater.

**Perth Amboy, N. J.**—An ordinance to pave Kearny ave. with sheet asphalt has been adopted on second and final readings by the Board of Aldermen, thus ending the contest between the adherents of asphalt block and sheet asphalt.

**Perth Amboy, N. J.**—Council has decided to pave State st. from Smith to Market st. with sheet asphalt; King st. from Smith to Market st. with sheet asphalt; State st. from Gordon st. to the Raritan River with asphalt block; Lewis st. from Water st. to Madison ave. with sheet asphalt; Fayette st. from Madison ave. to the Central Railroad with brick, and Hobart st. from Smith to Market sts. with sheet asphalt.—Wilbur La Ioe, City Clerk.

**Plainfield, N. J.**—It has finally been decided that the oil to be used on the streets in North Plainfield is what is known as Standard asphalt oil, made by the Standard Oil Co.; streets to be oiled are Watchung ave. to Mountain ave.; Somerset st. to Greenbrook road; Grove and Washington as far as Rockview ave.; Craig place and Prospect place are also to be treated with the oil.

**Plainfield, N. J.**—Council has adopted resolution to issue \$11,000 bonds for street improvements.

**Rutherford, N. J.**—That the Erie Railroad Co. should at once be compelled to take steps toward improving the dangerous conditions of the crossings between the two boroughs has been brought to the attention

of Council in the form of a petition presented by Judge Guy L. Fiske, Addison Ely, Jr., former Mayor Luther Shafer, Borough Attorney John M. Bell, Cook Conkling and several others.

**South Orange, N. J.**—The Roads Committee of the Village Board of Trustees has decided to oil a number of streets, and work will be begun soon; roads on which the oil will be applied are Academy st., Prospect st., Irvington ave., Vose ave., Raymond ave., Charlton ave., Berkeley ave., Ridgewood road, Montrose ave., Centre st., Scotland road, and part of Hillside place.

**Trenton, N. J.**—Council is considering the paving of 2d st. with asphalt; Park Board has asked for a \$1,000 appropriation for the laying of sidewalks on the Stuyvesant ave. side of Cadwalader Park.

**Newburgh, N. Y.**—Citizens are urging the immediate paving of Grand st. between Broadway and 3d st.

**New York, N. Y.**—Plans for extension and improvement of Riverside Drive from 155th st. to Spuyten Duyvil, at a cost of \$4,500,000, have been approved by the Municipal Art Commission.

**Rochester, N. Y.**—The Board of Contract and Supply has designated asphalt for the paving of East ave. between Culver road and Colby st.; property owners could not agree and the law provides that in this case the Board decides.

**Schenectady, N. Y.**—The Board of Contract and Supply will expend about \$38,000 for paving; bids will be received in about two weeks.—Harry F. Miller, Secretary.

**Syracuse, N. Y.**—Council has adopted an ordinance calling for the paving of Marcellus st. with sheet asphalt and brick along the street car tracks.

**Whitestone, L. I., N. Y.**—Agitation on the part of the residents has resulted in a definite promise from Borough President Gresser, of Queens, that some much needed improvements would be begun soon on the main streets in that section; streets included in the plans are: 8th ave., from 16th st. to 21st st.; 18th st., from the Long Island Railroad crossing to 11th ave.; 60th st., from 7th ave. to 8th ave.; 7th ave., from 8th st. to 18th st.; engineer's estimate of the cost of this improvement is \$50,000, and the work will be commenced as soon as the bids can be let.

**Akron, O.**—The Board of Public Service has under consideration the improvement of the following streets: Russell ave., Crosby st., Highland ave., Mayfield ave., Sweitzer ave., Broadway st., Quarry st., Dodge ave., and Coburn st.

**Alliance, O.**—Citizens will vote August 17 on the following bonds: \$31,000 for abolishing grade crossing at the intersection of North Arch ave. and the Cleveland & Pittsburgh Railroad; \$13,000 for paying city's share of the cost of repaving Main st.; \$10,000 for opening West Broadway and \$19,000 for opening 5th st. and constructing a subway at the intersection of 5th st. and the Cleveland and Pittsburgh Railroad.

**Canton, O.**—Bids for the paving and improving of West Tuscarawas st. from Harrison ave. to the west city limits will be received and the contract let in about a month, according to Jesse Starrett, City Engineer; other improvements for which bids will be received at this time are the grading, curbing and building of sidewalks of Warner ave., from Tuscarawas to 9th, Wheeler from Mahoning to Rider, East 8th from Warner to Belden, Lewis from Harriet to Brown, North Clarendon from Tuscarawas to Fairview, Belden from Lake to Pennsylvania tracks, Bellevue from Cleveland to west corporation line, South Clarendon from Tuscarawas to Hampden, Dewalt from 8th to Cedar, Woodland, from Grover to Grand ave.

**Columbus, O.**—State Highway Commissioner J. C. Wonders has appointed Professor Chamberlain, of the Engineering Department of the State University, Engineer to make the preliminary survey of the road in Norwich Township which is to be improved with State aid this year, and he is now engaged in the work. Commissioner Wonders has announced that he would be ready to advertise the contract in a short time and will push the work; road runs west from the stone quarries at Marble Cliff to the vicinity of Rome.

**Dayton, O.**—The Servers have ordered the Clerk to advertise for bids on several street improvements; this includes the paving of Harper ave. from Dover to the alley east; Monument ave., from Western ave. to the Home ave. railroad; Rubicon st. from Ashley to Wyoming st., and Stoddard ave. from Forest to Belmont ave.

**Dayton, O.**—Council is considering the improvement of Monument ave., 3d and Liberty sts., Parnell ave., and Wyoming and Rubicon sts.—C. P. Floyd, Clerk.

**Dayton, O.**—City is considering the paving of a number of streets next fall.—W. D. Riddle, City Engineer; J. C. Ely, Chairman Board of Public Service.

**Defiance, O.**—More than \$125,000 will be expended in Defiance the coming summer and fall in building and construction work; of this amount \$83,000 will be expended by the city in municipal improvements; first step toward this improvement was taken when \$66,000 worth of paving bonds were sold to the Ohio Savings Bank and Trust Co., of Toledo; an additional issue of \$27,000 will soon be sold; first issue is to cover the cost of paving Jefferson, 2d and North Clinton sts.; additional issue will be used in the Wayne and Francis st. sewer improvements and the filling in of the Preston Run street car trestle and the extension of the thoroughfare to the plants of the American Steel Package Co. and Defiance Pressed Steel Co.

**Delaware, O.**—The issue of \$12,000 street improvement bonds has been sold to the Delaware National Bank, paying par, accrued interest and \$635 premium.

**Delaware, O.**—The Board of Public Service will pave 10,000 sq. yds. on Winter st. next fall.—R. Parson, Chairman.

**Findlay, O.**—The Board of Commissioners of Hancock County will receive bids July 23, noon, for \$15,000 park improvement bonds.—J. A. Sutton, Auditor.

**Hamilton, O.**—The City Engineer will prepare plans and estimates for paving North D from Main st. to Park ave., and F st. from Ross to Park ave.; also South Front st. from Sycamore to Hanover sts. by paving with sheet asphalt.

**Kent, O.**—Council has passed a resolution for paving South Water st.

**Lakewood, O.**—City did not let contract for paving Woodward ave.; Wm. H. Evers Eng. Co., 237 The Arcade, Cleveland, Engrs.

**Lisbon, O.**—The Board of Commissioners of Columbiania County will soon advertise for bids for grading a hill on the Hanaverton-New Alexander road, near the Eden Reeder farm.

**Lisbon, O.**—The County Commissioners will receive bids July 14 for the construction of a road from East Palestine to Unity.

**Newark, O.**—City is considering the paving of the following streets: Wilson st., 7,000 yds. brick; N. 4th st., 8,200 yds. asphalt; S. 4th st., 7,500 yds. brick; S. Pine st., 7,500 yds. brick; Mohollen st., 8,600 yds. brick; Buena Vista st., 4,000 yds. brick; Hudson ave., 3,500 yds. brick.—N. M. Taylor, President Board of Public Service.

**Springfield, O.**—Bids will be advertised in about three weeks for about 6,670 sq. yds. of brick and asphalt paving on McCreight ave., 1,200 sq. yds. on Spring st. and 1,000 sq. yds. on Monroe st.—J. M. Bahin, City Engineer.

**Steubenville, O.**—The Engineer has been instructed to advertise for bids for street paving on La Belle View on Pittsburg st. from West Market to Ridge ave.

**Toledo, O.**—County has awarded \$26,709.80 road improvement bonds to Breed & Harrison, Cincinnati, at a premium of \$1,135.27.

**Ada, Okla.**—The \$10,000 of street improvement bonds, recently voted by this city, have been sold to E. D. Lumsden, of Oklahoma City, at par; construction of the street crossings will begin at once; they are to be built of vit. brick and concrete.

**Ardmore, Okla.**—Morgan Township has voted \$40,000 bonds for building roads, bridges and culverts.

**Claremore, Okla.**—Plans and specifications are being prepared for ten blocks of rock asphalt pavement.

**El Reno, Okla.**—In addition to an interurban line from El Reno to Oklahoma City, there will be built a boulevard and speedway the entire distance of almost 30 miles; project was launched here some time ago and Mr. Schafer has stated that a width of 100 ft. or more the entire distance of the right-of-way will be reserved for tracks and driveway; as soon as the tracks are completed to Yukon from Oklahoma City work on the boulevard will begin; work from this end will start soon, as will the grading of the interurban line; boulevard extension will pass through Berea, Glen Scho and Brookline additions at Oklahoma City; route of the interurban into this city has not yet been determined, but this will be decided upon soon.

**Oklahoma City, Okla.**—The Morris Packing Co., of Chicago, will erect a \$500,000 plant outside of the city; city has obligated itself to build and pave a boulevard from the plant to the city.—W. C. Burke, City Engineer.

**Oklahoma City, Okla.**—City will let between now and August 1 about \$350,000 additional pavement contracts.—W. C. Burke, City Engineer.

**Baker City, Ore.**—Bids will be received at once for the paving of Front st.

**La Grange, Ore.**—City will pave 11 blocks with bitulithic and a considerable distance with macadam.

**Bath, Pa.**—The sum of \$50,611.73 has been appropriated by the State Highway Department for highway improvement in Steuben county the coming year.

**Chester, Pa.**—The Finance Committee has decided to report favorably for the consideration of Councils a loan bill authorizing the borrowing of \$600,000 for municipal improvements, \$423,000 being set aside for the improvement of the streets, the remainder to be used for sewers, a fire alarm system and other needed improvements.

**Coatesville, Pa.**—The elimination of grade crossings by the construction of subways along the line of the Pennsylvania Railroad in Coatesville is being considered.

**Harrisburg, Pa.**—Council is considering the paving and curbing of Granite st. from 5th to 6th sts.—C. A. Miller, Clerk.

**Philadelphia, Pa.**—City has \$225,000 available to partially pave Market st. with wood block from 2d to 16th st.

**Pottstown, Pa.**—Council has passed an ordinance authorizing the issuing of \$25,000 4 per cent street improvement bonds.

**Washington, Pa.**—No exceptions have been filed to the proposed improvement of the Monongahela-Donora road, the Canonsburg-Houston road by paving, with brick; Commissioners will now advertise for bids.

**West Chester, Pa.**—The Borough Council is preparing to macadamize or cover with tarvia a number of the principal streets in the suburbs of that town.

**Williamsport, Pa.**—Bids will be received by Highway and Sewer Committee July 19, noon, for repairs to asphalt streets as follows: West 4th st., approximately 5,700 sq. yds.; West 3d st., 7,500 sq. yds.; and also for repairing all asphalt streets which the City Engineer may decide need repairing.—J. J. Galbraith, City Clerk.

**Easley, S. C.**—City is considering paving of various streets.—J. M. Jameson, Mayor.

**Blountville, Tenn.**—Sullivan County Court has voted to issue \$200,000 road bonds in addition to the \$100,000 appropriated and being used in the construction of roads at present.

**Bristol, Tenn.**—An effort will be made to have the counties in East Tennessee restore the old stage road from Kingston to Abingdon, Va.; if the Virginia counties also restore the old road, and Georgia carries out its intention of restoring the link of it through that State it will be complete from Atlanta to Washington.

**Memphis, Tenn.**—Council is considering the expending of \$100,000 in making Union ave. a permanent asphalt paved thoroughfare.

**Trenton, Tenn.**—Citizens will vote August 3 on \$20,000 bonds for paving and graveling streets.

**Houston, Tex.**—Harris County will vote August 3 on \$500,000 bonds for road and bridge construction.

**Waco, Tex.**—Citizens will vote July 14 on \$75,000 street improvement bonds.

**Waxahachie, Tex.**—Citizens of Justice Precinct No. 7 will vote Aug. 7 on \$75,000 good road bonds.

**Lynchburg, Va.**—City is considering the issuing of \$400,000 bonds for street paving and other improvements.—H. L. Shaner, City Engineer.

**Newport News, Va.**—City has decided to expand \$20,000 for paving streets.

**Winchester, Va.**—The Supervisors of Frederick County will shortly award contracts for extensive road improvements.

**Puyallup, Wash.**—Council has been petitioned to pave Pioneer ave. with asphalt or granitoid; cost from \$2.25 to \$2.50 per sq. yd.

**Seattle, Wash.**—A special committee composed of Councilman Frederick Sawyer, A. J. Goddard and Frank P. Mullen, has reported to the Street Committee in favor of the proposed improvement of Alki ave., at an estimated cost of \$10,000; this improvement will consist of planking both street and bridge.

**Seattle, Wash.**—Residents of Kent and Orillia have petitioned the County Commissioners to construct a macadamized road over the west route between the two places and allow the State to construct the east road one mile distant.

**Seattle, Wash.**—Council has passed ordinances providing for paving on North Division st., Perry st., Grand st. and Howard st.

**Tacoma, Wash.**—Council has adopted ordinance instructing the Commissioner of Public Works to have plans and estimates prepared for the paving of Commerce st. from South 19th to 25th sts.; also for the paving of Puyallup ave.

**Vancouver, Wash.**—Council has decided to oil 20 blocks of the streets.

**Wenatchee, Wash.**—Council has decided to start the improvement of three more streets by grading, curbing, parking and laying cement sidewalks; this will make four miles of streets on which improvements are to be made or are already under way; total cost \$75,000.

**Follansbee, W. Va.**—Citizens have voted \$15,000 bonds for street improvements; bids on construction will be received soon.—Jas. Walmsley, Mayor.

**Wheeling, W. Va.**—The Security Bank

and Trust Co., of Toledo, has been awarded the contract for the purchase of bonds for the township road improvement by the Township Trustees.

**Oconto, Wis.**—City has decided to order the construction of sidewalks.

**Barrie, Ont., Can.**—Citizens have voted \$10,000 bonds for cement sidewalks.

**Waterloo, Ont., Can.**—The City Council has decided in favor of the expenditure of the following amounts by the various municipalities for the improvement of highways under the good roads system: Waterloo Township, \$1,300; Wilmot Township, \$6,000; Wellesley Township, \$1,800; North Dumfries, \$1,500; Berlin, \$6,333; Galt, \$2,100; Waterloo, \$9,300; Hespeler, \$1,500; New Hamburg, \$500; Elmira, \$325; total, \$30,058.

**Welland, Ont., Can.**—Council is considering the paving of East and West Main and Muir sts.; cost, about \$100,000.

## BIDS RECEIVED AND CONTRACTS AWARDED

**Mobile, Ala.**—The following bids were opened by the Board of Public Works: Southern Fuel & Gravel Co., Mobile, agreed to furnish 2,600 yds. of clay gravel at \$1.92; Jackson Sand Co., Jackson, Ala., same quantity at \$1.89; Toulmin & Son, Mobile, \$2,600 yds. iron clay gravel at \$1.84; the Engineer figured that Toulmin & Son were the lowest bidders and that the cost would be \$4,984 and it was finally agreed to take the matter under advisement.

**Montgomery, Ala.**—City Council awarded contracts for paving Perry, Goldwaite and High sts., and Forrest and Jeff Davis aves.; City Treasurer was authorized to invite bids for paving Mildred and South Lawrence sts. and Clitheral ave; will also ask for bids on sidewalk paving on Union, Lawrence, Jefferson and other streets.—A. R. Gilchrist, City Engineer.

**Little Rock, Ark.**—H. H. McCarthy, paving contractor, and C. N. Faubel, sidewalk contractor, both of Little Rock, have signed contracts for proposed grading and paving and laying sidewalks on Prospect ave., from city limits of Little Rock to Hillcrest in Pulaski Heights.

**Los Angeles, Cal.**—Contract for the street work along Sunset blvd. was awarded, on June 23, to the Barber Asphalt Co., Henne Bldg., Los Angeles, for \$181,733; this does not include the work for sidewalks, which is still in abeyance through appeals to the courts to determine the validity of the Johnson Act, recently passed by the Legislature.

**Oakland, Cal.**—The Board of Public Works has awarded contract for improving Dana st. to Blake & Bilger Co., at the prices named for said work in its proposal on file, namely: Grading street, including sidewalk, cutting, 2c. per sq. ft.; macadamizing, 7½c. per sq. ft.; curbing with redwood, 13c. per lin. ft.; gutters, concrete, 14c. per sq. ft.; two wooden bridges, 5x4 ft., \$5 each.

Contract has also been awarded to Hutchinson Co. for grading Bruce st., including filling sidewalks, at 35c. per cu. yd.—Frank R. Thompson, City Clerk.

**San Jose, Cal.**—At a meeting of property owners of West San Fernando st., the Barber Asphalt Paving Co. was awarded the contract to pave the street, their bid being the lower of the two submitted for consideration. The bids of the Ransome-Crummey Co. follow: Concrete curbs, 35c.; concrete gutters, 17 8-10c. per sq. ft.; catch basins, \$45 each; asphalt paving, 17 8-10c. per sq. ft.; grading, 2c. per sq. ft.; drains, 75c. per lin. ft.

The successful bidder quoted prices as follows: Paving, 17 1/2c. per sq. ft.; grading, 2c. per sq. ft.; curbs, 33c. per lin. ft.; gutters, 18c. per sq. ft.; 8-in. sewer, 70c. per sq. ft.; 6-in. sewer, 65c. per sq. ft.; catch basins, \$40 each; inlaid grading, \$4.75.

The Barber Asphalt Paving Co. will erect a plant in this city valued at \$15,000 and keep it here permanently to care for new contracts and prepare material for making repairs when they may prove necessary.

**San Jose, Cal.**—Property owners of North 1st st. beyond the Vendome are in favor of letting a private contract for the bituminizing of North 1st st. from Hobson st. northward 1,000 ft. Figures for the same were presented by three bidders, that of the Ransome-Crummey Co. being the lowest. They agreed to lay the paving asphalt upon 6 in. of concrete for 19c. the gutter for 17c., the curb for 30c. a lin. ft., catch basins for \$35, gratings \$5, and drains for 75c. a lin. ft. A comfortable majority of the property owners whose places front upon the street to be improved have signed a contract with the asphalt company, and representatives of the same will call upon the balance of the owners in quest of signatures. In case the people do not wish to secure the improvements upon a private contract, Superintendent of Streets V. M. Trace, representing the Best Roads Association, asserted that the mat-

ter would be carried through upon a public contract in the usual manner, but this would cost the property owners more and would entail unnecessary delay.

**Hartford, Conn.**—State Highway Commissioner MacDonald has awarded contracts for the building of three sections of road as follows: For 4,175 ft. on Oakland st. in Manchester the bid of Olmsted & Olmsted, of East Hartford, was accepted. The macadam construction is for \$1.34 a lin. ft. and for Telford \$2.40 a ft., with cobble gutters at 45c. a sq. yd. The other contract in Manchester was for 4,700 ft. on Charter Oak st. and went to O. T. Benedict, of Pittsfield, Mass., macadam at \$1.59 a ft., Telford at \$2.39 a ft. and cobble gutters at 60c. a sq. yd. The contract for 15,920 ft. on the West Hartford-Simsbury rd. in the town of Bloomfield was awarded to the Pierson Engineering & Construction Co., of Bristol, macadam at \$2.20 a ft., Telford at \$2.60 a ft. and cobble gutters at 50c. a sq. yd.

**Harrisburg, Ill.**—Roy L. Williams, Cairo, has secured the contract for 26,600 sq. yds. of brick paving and 19,350 lin. ft. of sandstone curb for \$56,100.

**Joliet, Ill.**—R. F. Conway Co. has been awarded the contract for the improvement of Nicholson st., by the construction therein of an asphalt pavement, as provided for in Ordinance No. 2,363, at the following prices, to wit: 1,815 sq. yds. asphalt paving, inclusive of 6 ins. of concrete foundation, grading and binder, \$2.25 per sq. yd.; 810 lin. ft. curbing, including all excavation and backfilling, in place complete, 50c. per lin. ft.; 950 cu. yds. excavation, 50c. per cu. yd.; 140 ft. resetting old curbing, 10c. per lin. ft.; three catch basins rebuilt and connections complete, \$25 each; two new valve manholes complete, \$20 each.—William S. Welch, Clerk Board of Local Improvements.

**Rushville, Ill.**—A. T. Franks, of Jacksonville, has secured the contract for street improvements in Rushville at \$30,062.

**Staunton, Ill.**—Contract for 9,917 sq. yds. brick pavement, bids opened June 20, has been awarded to Wolf Bros., of Alton, for \$20,859.—Geo. H. Luker, Mayor.

**Fort Dodge, Ia.**—The Bryant-Ford-McLaughlin Asphalt Paving Co., of Waterloo, was awarded the contract for 12 more blocks of asphalt paving on 1st, 4th and 5th aves. south; the cost of the paving will be about the same as that previously laid, though the city is handicapped because of the fact that the sand used must be hauled some distance; it will cost \$2 per sq. yd. In Waterloo, where the sand employed in the concrete foundation for asphalt paving is on hand everywhere without hauling it, the cost of asphalt paving per sq. yd. is \$1.87 1/2. In Sioux City, where a 4-in. instead of 5-in. concrete foundation, as will be used here, is employed, the asphalt paving costs \$2.05 per sq. yd. Des Moines pays from \$1.99 to \$2.34 per sq. yd.

**Maguoketa, Ia.**—Bids were opened for paving and the contract has been awarded to Mike Ford, of Cedar Rapids, at the following bid: 17,275 sq. yds. Burlington brick paving, on 5-in. concrete base, \$1.64; 1,860 ft. plain curb, 6 x 20 in., 32c.; 4,335 ft. combined curb and walk extension, 52c.; 5,065 cu. yds. excavation, 42c.; 15 catch basins, \$10 each; total, \$33,458.

**Marshalltown, Ia.**—Bids for concrete paving have been received as follows:

R. A. Elzy, Marshalltown.—Excavating, 40c. per cu. yd.; additional haul over 14,000 ft. for each additional 200 ft., 4c.; curbing, per lin. ft., 32c.; preparing sub-grade and laying concrete foundation and wearing surface, \$1.65 1/2 per sq. yd.

Rudolph S. Blome & Co., Chicago.—Excavating, per cu. yd., 60c.; overhaul, 5c.; curbing, 56c.; paving, \$1.98.

Faulkes, Forbes Co., Terre Haute, Ind.—Excavating, 38c.; overhaul, 3c.; curbing, 42c.; street paving, \$1.69; alley paving, \$1.79.

M. Ford, Cedar Rapids—Excavating, 35c.; overhaul, 2c.; curbing, 48c.; paving, \$2.03, on Blome construction; \$1.80 on city specifications.

W. J. Sinnek, of the Blome Co., took occasion to take Council to task for a so-called infringement of Blome patents Nos. 343,849 and 460,230, and announced that he had served the city, through the City Clerk, with a written notice to the effect that a certain claim would be made in the event the company was not awarded the contract. This claim is for 25c. per sq. yd. as a royalty to the Blome Co. on the patents they claim on granitoid, and the use by the city of the specifications which Sinnek claims are Blome specifications slightly altered.

**Mason City, Ia.**—Council has let its contract for paving for \$1.19 per sq. yd., or 46 1/2c. lower than the lowest bid on paving at Marshalltown.

**Leavenworth, Kan.**—The contract for curbing Scott st. was awarded to Fred Tarry and the contract for paving to O. C. Chapin; the contract for paving 7th st.

from Kiowa to Metropolitan ave. was let to McGuire & Stanton; the price of paving in each case is \$1.50 per sq. yd.; a Portland cement base is to be used.

**Lexington, Ky.**—Kelly Bros.' bid for reconstructing North and South Broadway with Pebbles brick and No. 6 pitch filter was accepted, and the petition of North Broadway property owners asking for asphalt block reconstruction instead of brick was ruled out of order, as the ordinance provides for brick in apportioning the funds of the city.

**Chestertown, Md.**—The Juniatia Co., of Philadelphia, Pa., has secured the contract for constructing 3 1/2 miles of road from Chestertown to Kennedyville for about \$34,000.

**Cumberland, Md.**—The State Road Commission rejected the bid of Rudolph & Means, Windber, Pa., for 2 miles of road from Eckhart mine, through Frostburg to the Garrett County line. E. C. Hunter, of Washington, Pa., secured the contract for 3 miles in Queen Anne County, from Centreville toward Church Hill for \$33,711.30; 2 miles in Harford County went to Fisher & Carozza for \$17,522.50, and 3 miles in Talbot County to G. M. Fresh for \$28,986.50.

**Oakland, Md.**—J. E. Francis, of Punxsutawney, Pa., has secured the contract to construct 5.55 miles of macadam road at Oakland for the State of Maryland at about \$58,000.

**Boston, Mass.**—Wm. J. Barry has secured the contract for paving with bituminous macadam a portion of Morton st. for \$11,323.

**New Bedford, Mass.**—Three hundred thousand granite paving blocks to be used for repaving Weld st. and for other work that Superintendent Lawton of the Street Department has laid out for the present year will be furnished by John B. Sullivan & Son, the New Bedford & Dartmouth Granite Co. (Lafrance Bros.), and Buzzards Bay Pink Granite Co. (M. J. Sullivan), the contract being divided by Mayor Bullock and Superintendent Lawton so that each firm will furnish 100,000 blocks. Proposals for the contract were submitted by seven firms, and though the figures of the local contractors were not the lowest, they agreed to deliver the blocks in any part of the city as directed by the Superintendent of Streets, and it was figured it would be cheaper to pay the local men the price they asked than to award the contract on the prices submitted for the blocks "f. o. b." cars or at the wharf.

John B. Sullivan & Son's bid was for large blocks at \$1.65 per yd., Lafrance Bros. \$1.60, and M. J. Sullivan \$1.40. All three proposed only to furnish 100,000 blocks.

The bids were as follows:

New England Granite Co., Westerly, R. I., large per sq. yd., \$1.65; small per sq. yd., \$1.50.

Smith Granite Co., Westerly, R. I., large per sq. yd., \$1.65; small per sq. yd., \$1.50.

Booth Bros. and Hurricane Island Granite Co., New York City (alongside wharf), large per sq. yd., \$1.50; small per sq. yd., \$1.37.

H. V. Hildreth, Westport, Mass., large per sq. yd., \$1.65; small per sq. yd., \$1.50.

New Bedford & Dartmouth Granite Co., large per sq. yd., \$1.65; small per sq. yd., \$1.50.

John B. Sullivan & Son, large per sq. yd., \$1.65; small per sq. yd., \$1.50.

Buzzard's Bay Pink Granite Co., large per sq. yd., \$1.40; small per sq. yd., \$1.30.

The specifications call for large size blocks from 7 to 12 ins. long, 4 to 5 ins. wide and 7 to 8 ins. deep; the small blocks are the same length and width and 4 to 5 ins. deep.

The prices submitted by all except the last three bidders and that of the New York firm were for blocks "f. o. b. cars," while the others will deliver the blocks on the streets as required, and thus the city is saved one handling.

**Grand Rapids, Mich.**—The contract for paving South Division st. from the Pere Marquette tracks to Burton ave. has been awarded to E. W. Seamans for \$32,013.

**Duluth, Minn.**—Council has approved the award, made by the Board of Public Works, of the contract for paving 6th and Vista sts. with granitoid, from Wallace to Woodward aves., to Rudolph S. Blome & Co., of Chicago, their price being \$14,000; this will be the first experiment with this sort of paving in Duluth. D. H. Clough gets the contract for laying the cement curb and gutter.

**West Point, Miss.**—City has awarded contract to Mr. Osborne, Columbus, Miss., for construction of concrete sidewalks; cost \$15,000.—C. L. Wood, Columbus, Engineer.

**Bedford, N. H.**—The following bids were received, July 3, for street paving: Ahern Bros., Norwich, Conn., \$5,736.10; F. E. Ellis, Melrose, Mass., \$5,137.10; P. A. McIntyre, Mattapan, Mass., \$4,957.10. The following bids were received for Bedford curbing: F. E. Ellis, \$2,903.30; P. A. Mc-

Intyre, \$2,367; A. J. Carasagh, Braintree, Mass., \$3,429.20.

**Atlantic City, N. J.**—Council has awarded contract for paving about 60,000 sq. yds. with bitulithic to the United Paving Co., for about \$300,000.

**Glassboro, N. J.**—The Glassboro Cement Paving Co. has secured the contract to put down all walks for the township.

**Longport, N. J.**—A contract for building the new boardwalk to connect with that of Atlantic City, Ventnor and Margate City, making a 12-mile stretch of plankway, has been awarded; the work, which will cost about \$10,000, will be done by the Cooney Construction Co., of Atlantic City.

**New Brunswick, N. J.**—Common Council, July 6, by a vote of 9 to 3, passed over Mayor Florence's veto the resolutions awarding four street paving contracts to Thomas R. Riddle for Clymer brick; petitions were presented from property owners on three of the streets urging prompt action in the matter; Mine st. property owners propose, it is said, carrying the awards to the Supreme Court on writs of certiorari.

**Trenton, N. J.**—A resolution has been adopted awarding the work of macadamizing Murray st. to Richard Newton, the lowest bidder.

**Trenton, N. J.**—Thomas J. McGovern was low on the proposed paving of Chestnut ave., Monmouth st., Tyler st., Pearl st., Fall st., Decatur st. and the resurfacing of Bank st. and Montgomery st.; all but one of the eight competitors bid on Bermudez asphalt, which is the only asphalt that can comply with the specifications. John Ginder's bid was on California asphalt. Mr. McGovern's bid on the paving work was \$1.84 a sq. yd., while the Filbert Co.'s bid was \$1.98; Delaware River Quarry & Construction Co., \$1.87; Cranford Co., \$2.03; United Paving Co., \$2.19; John Ginder, \$1.88 and \$1.89; Cranford Paving Co., \$2.09. Mr. McGovern was also low bidder on the resurfacing of Bank and Montgomery sts., his bid on the latter work being \$1.13 on a Belgian block foundation and \$1.33 on a concrete foundation. The Filbert Co. bid \$1.33 on a Belgian block foundation and \$1.44 on a concrete foundation. On the Bank st. work, Mr. McGovern bid 73c. a sq. yd. and the Filbert Co. \$1. Mr. McGovern's bid was on a pavement made up of asphalt, sand and stone, which he claims are the ingredients used in "Filbertine," the material bid on by the Filbert Co.

Mr. McGovern, claiming that the city is wasting money by paying a dollar a yard and more for "Filbertine," a patented preparation, submitted a communication to Council, in which he offered to pave Bank and Montgomery sts. at the rate of 40c. a sq. yd. Mr. McGovern's communication was presented to Council by Councilman William J. McClain, who stated that the city would save thousands of dollars by accepting Mr. McGovern's offer.

**Woodbridge, N. J.**—Senator Robert Adrain, of New Brunswick, N. J., received from Trenton a copy of the opinion of Supreme Court Justice Reed setting aside the contract awarded June 12, 1908, to Warren R. Thompson by the Township Committee of Woodbridge for the macadamizing of Woodbridge ave. at \$1.18 per sq. yd. He was the highest of the three bidders for the work. Thomas Dunigan bidding 93c. a sq. yd., and Liddell & Phelffer bidding 98c. Mr. Dunigan retained Senator Adrain as counsel.

**Elmira, N. Y.**—The Board of Public Works has awarded contracts for paving as follows: Walnut st., Pennsylvania ave., West 5th st. and Park pl. to McGreevy, McGuigan & Baum Construction Co., for about \$35,000, and to Costello & Neagle, of Elmira, for Lake st. at about \$15,000.

**Holley, N. Y.**—After three weeks of demonstration on the highways in the town between the Buffalo Pitts Standard roller, the Monarch and G. L. Case, all 10-ton rollers, the Town Board awarded the order to the G. F. Case Co., of Racine, Wis., through its agent, E. E. Rogers, of Painted Post, N. Y.

**Lockport, N. Y.**—Harry Whitney, city, was awarded the contract for paving the new cement sidewalk on Ontario st. over which there has been quite a fight, there being considerable opposition to the walk on the part of many property owners. The bids were as follows: P. F. Niland, \$2,075; Harry Whitney, \$2,024; C. B. Whitmore Co., \$2,140; William Franklin, \$2,189.

**Peekskill, N. Y.**—The contract for improving the Croton Dam road, also known as Purdy's Flats, was awarded to Martin Hunt, whose bid for doing the work was \$1,500. The other bids were: Acker & Leener, \$1,745.50; Lent & Chase, \$1,764; F. A. Canney, \$1,949; Travis & Slaving, \$2,175.

**Rochester, N. Y.**—The following contracts were awarded: Pembroke st. brick pavement to H. C. Schroeder, \$5,474.50; Lansdale st. brick pavement to H. C. Schroeder, \$5,313; Nelson st. brick pavement to Louis D'Argento, \$4,752.

**Utica, N. Y.**—Two petitions were received from property owners on Shaw st., one designating asphalt as the kind of pavement to be used and the other calling for Pittsburg and Buffalo brick. There was a division in the Board of Contract and Supply upon the designation, City Engineer O'Brien and Controller Heusswig voting against the resolution designating brick and the other members of the board favoring it. The contract was awarded to James W. Johnston. His bid was \$2.40 per sq. yd. for Pittsburg and Buffalo brick. The other bids were J. R. Baxter, Jr., \$2.26 per sq. yd. for Clearfield brick and the Barber Asphalt Paving Co. \$2.14 for Clearfield brick and \$1.91 for asphalt. Natural stone curb was designated to be used in connection with this pavement. The law provides that two-thirds of the property owners owning three-fifths of the foot frontage may designate any particular make, style or brand of pavement, and the brick petition apparently complied with this section of the charter.

**Akron, O.**—The Board of Public Service has awarded the contract for the paving of Allyn st., from Powers to South sts., to E. McShaffrey & Son; contract calls for Akron granite brick for paving stone curb and tar filler; contract price for the work as submitted in the bid is \$12,130.

**Bucyrus, O.**—The Trustees of Texas Township received 16 bids on two sections of road of 2 miles each. The bidders present were as follows: The National Lime & Stone Co., L. R. McMichael, The Brokensword Stone Co., D. F. Malloy & Bro., Sousley Bros., H. N. Oberlander, The Fostoria Construction Co., J. C. Reiff, S. L. Blowers, W. H. Raymond & Co., D. Kissling, John Weidenmyer, The Rimer Stone Co., G. V. Harrer, Messnard & Stuckey, A. R. Taylor. Section No. 1 was secured by G. V. Harrer at \$2,226.77 for labor and \$2,197.44 for material; total, \$4,424.21. On Section No. 2 The National Lime & Stone Co. secured the contract for material at \$2,314.70, and John Weidenmyer the labor contract for \$1,732.20; total, \$4,046.90.

**Cincinnati, O.**—The Board of Public Service has accepted bid for paving Pine Tree st., from Queen City ave. to Tremont st., with boulders, A. J. Henkel; \$4,018.90, and for paving Harrison ave., from Fischer's west line to west corporation line, with granite, the Kirchner Construction Co., at \$79,286.70; the bid of the Kirchner Construction Co. on the Harrison ave. paving is just about \$20,000 below City Engineer Sundmaker's estimate.

**Ironton, O.**—The contracts for the new roads throughout the County were awarded by the County Commissioners as follows: J. H. Francisco, Section No. 1 of Porter Gap; Frank Dillow, Section No. 1 of the north end of Greasy Ridge; W. H. Jenkins, Section No. 2 of the south end of Greasy Ridge; Argo Lunsford, Section No. 2 of Turnpike No. 1, extended; Ben Dillon, Section No. 2 of Paddy Creek; J. H. Francisco, Section No. 2 of Porter Gap; J. I. Wilgus, Section No. 1 of Turnpike No. 1, extended; Allen Patton, Section No. 1 of Elkins Creek; James Gore and John H. S. Dillon, Section No. 2 of Elkins Creek; John Holzappel, Section No. 1 of Maddyville.

**Mt. Vernon, O.**—Highway contracts in Knox County have been let by James C. Wonders, State Highway Commissioner, Columbus, Ohio, as follows: Highway A, Columbus rd., Ohio Paving Co., Nasby Bldg., Toledo, Ohio, \$7,000; Highway B, Centerburg and Delaware rd., Ohio Paving Co., Toledo, O., \$8,000.

**Paulding, O.**—The following bids were received, July 2, for macadamizing Mellinger pike, 13,485 ft. long: Columbus Goode Stone Co., \$8,401.95; Jackson & Nichols, \$8,496.42; A. Scott, \$8,503.13; A. C. Roach, \$8,580.70; Gottschius Stone Co., \$8,733.12. The following bids were received for macadamizing Harpster pike, 10,810 ft. long: Botenmeyer, Sherrard & Randolph, \$5,465.85; Columbus Goode Stone Co., \$5,740.29; Jackson & Nichols, \$5,755.30; Hancock Stone Co., \$5,759.15; A. Scott, \$5,832.72; R. C. Roach, \$5,886.26.—R. C. Leslie.

**St. Marys, O.**—The Ohio Paving Co., which was considerably the lowest bidder on the High st. paving contract, will be delayed in getting to work on the job in the event it is finally awarded them, as the Service Board decided to postpone letting the contract in order to investigate the class of work and responsibility of the low bidders.

**Toledo, O.**—Contract for furnishing material and repairing Monclora, Stone rd., No. 6 has been awarded to C. W. Ryan, of Whitehouse, at 99c. per ton for stone, 97c. per ton for screenings.—D. T. Davis, County Auditor.

**McAlester, Okla.**—City has awarded contract to McEachin & Enloe, of McAlester, at \$91,205 for paving 34,551.7 sq. yds. with brick on concrete base, and Cleveland Trinidad Paving Co., Cleveland, O., for 36,551.1 sq. yds. asphalt paving on concrete base at \$119,996.

**Erie, Pa.**—Contractors John McCormick & Son and Mayer Bros. have given official written notice to Common Council that on Wallace st., from 5th to 8th, and on East 8th st., from Parade to East ave., on which they had been awarded contracts for brick pavements at a price a little lower than asphalt, they would be willing to substitute asphalt, as the property owners seemed to desire, without extra cost. Councilman Barber moved to have the contractors' proposal referred to the City Solicitor, in whose hands are the unaccepted awards of the brick pavement contracts.

**Lancaster, Pa.**—The following bids were opened for macadamizing Chester st., from Ann to Marshall, Marshall to Franklin and Franklin to the Stevens Industrial School; Lancaster Lime & Supply Co., \$1,430, \$1,546, \$1,337; John B. Heidig, \$1,446, \$1,411, \$1,099; John B. Kendig, \$1,295, \$1,480, \$1,246.70, or \$3,900 for the whole work.

Proposals were opened for paving the following streets: Mifflin st., between Church and Lime sts.; Prince st., between Andrew and Hazel sts.; Orange st., between Charlotte st. and Marietta ave.; Chestnut st., between Mary and Nevin sts.; Lemon st., between North Queen st. and Lancaster cemetery; Christian st., between James and Frederick sts.; Howard ave., between East King and Shippen sts.; Prince st., between German and Conestoga sts.

The bidders were as follows: Myers & McWilliams, Mack block, \$2.23 to \$2.31; Pine Grove block, \$2.13 to \$2.19; extra excavation, 75c, a cu. yd. F. X. Hinden, Williams Grove block, \$1.90 to \$2.15; Auburn block, \$1.85 to \$2.05; extra excavation, 50c, per cu. yd. J. U. Fritchey & Son, Mack block, \$2.10; Saxon block, \$2.10; Reading block, \$2.05; Pine Grove or Mack shale, \$1.82; extra excavation, 60c, a cu. yd.

**Mt. Pleasant, Pa.**—Thoney Pietro, a Morgantown, W. Va., contractor, formerly of Indiana, was given the contract for the sewerage and paving of Eagle and West Walnut sts. and College ave. by Council; of the 16 bidders he was the low man by nearly \$900, his offer being \$22,296.

**North York, Pa.**—The York Stone & Supply Co. was given the contract to furnish stone for the macadamizing of streets, its bid being \$1.15 per perch.

**Philadelphia, Pa.**—Contracts for asphalt paving were awarded recently as follows: Eight streets to Barber Asphalt Paving Co., Land Title Bldg., at \$1.49 to \$1.55 per sq. yd., and to Fibert Pav. & Construction Co., 15th and Chestnut sts., for 22 streets at from \$1.34 to \$1.44 per sq. yd.

**Philadelphia, Pa.**—Chief Engineer Hunter, of the Reading Railway, has awarded the following additional contracts in connection with the track elevation on Ninth st.: Masonry, trestle and embankments from the bridge at 17th and Indiana ave. to the south side of Tioga st., to the Armstrong & Latta Co.; masonry, trestle and embankment from the south side of Tioga st. to the bridge over the Richmond branch beyond Nicetown to Enos L. Seeds; bridges, ready for ballast, from the bridge at 17th and Indiana ave. to the bridge over the Richmond branch, to the American Bridge Co.

**Somerset, Pa.**—Town Council has awarded to Frank W. Clark, of the Eighth Ward, Johnstown, the contract for the paving with brick of four streets in this borough; Mr. Clark's bid, \$16,058.02, was the lowest in 12, the highest of which was that of Frederick Perry, \$29,641. The Thiele Construction Co. was another Johnstown bidder, its figure being \$26,715. The streets to be paved, and Mr. Clark's bid per sq. yd. for each, follow: West Main st., 9,268 sq. yds. at 64c; West Patriot st., 9,626 sq. yds. at 62c; South Main Cross st., 4,224 sq. yds. at 57c; East South st., 3,332 sq. yds. at 70c. In addition to this the contractor is to install a surface drainage system. Work is to be started soon on the improvements.

**South Fork, Pa.**—John Best, of Johnstown, has been awarded the contract for paving Lake st. from the Lake Hotel to the south side of Argyle st., and the Williams Grove Brick Co. and the Clearfield Brick Co., both Clearfield County concerns, were given the contract for furnishing the brick for the work; the paving will cost about \$3,500.

**Versailles, Pa.**—Borough Council has awarded to J. W. Butler, a contractor of Port Vue, the contract for paving Walnut st., which connects with Walnut st., McKeesport, for a distance of 1 mile; the amount of the contract is \$24,000; the completion will give about 4 miles of continuous paved street between the Monongahela and Youghiogheny rivers.

**Chattanooga, Tenn.**—The Board of Public Works received bids, June 22, for vit. brick paving and granite curbing on Boyce st., length of 2,700 ft.; the West Construction Co., 1001-1007 Market st., Chattanooga, are lowest bidders at about \$24,000.—H. F. Van Dusen, Chairman.

**Marlin, Tex.**—City has awarded contract

to John Gade, of Waco, to construct 50,000 sq. ft. of cement sidewalk.—F. S. Heffner, Mayor.

**Temple, Tex.**—City has awarded contract to Ockander Bros., Waco and Texarkana, Tex., at \$2.16 per sq. yd. for vit. brick street paving; total cost, \$100,000.

**Ysleta, Tex.**—Galley & Clark have contract to construct road from Ysleta to Clint.

**Centralia, Wash.**—The following are the totals of bids received June 22 for paving Pearl, Walnut, Locust and other streets, about 20,000 sq. yds., with necessary storm water drainage, curb, etc.: (a) asphalt, (b) wood block, (c) vit. brick, (d) Hassam concrete; Lister Construction Co., Tacoma, b \$70,720, c \$70,720; Northwest Bridge Co., Tacoma, b \$64,000, c \$71,000; B. S. Davis, Tacoma, b \$65,228; Bell-Stout Co., Seattle, d \$53,500; Sparger Concrete Co., Seattle, a \$66,200; F. A. Keasel, Tacoma, c \$67,142; Wright & Sweeney, Tacoma, a \$60,557, b \$63,163, c \$63,700.

**Seattle, Wash.**—The Board of Public Works has awarded the contract for paving 31st ave. south to P. J. McHugh for \$106,305.—R. H. Thomson, City Engineer.

**Spokane, Wash.**—The Board of Public Works has awarded the contract for paving 3d ave. to Independent Asphalt Paving Co. for \$32,777.

**Hinton, W. Va.**—All bids opened June 24 for 15 blocks of brick paving have been rejected and new bids will be received July 15; probably five more blocks will be added, making in all 22,000 sq. yds.—A. D. Daly, City Attorney.

**Fond du Lac, Wis.**—Contracts for paving have been awarded as follows: Cement sidewalks on Marr and Ellis sts. to Northern Paving Co., at \$28,727 and \$9,328, respectively, and on Portland st. to G. H. Stanchfield, for \$7,414.

## SEWERAGE

**Dothan, Ala.**—J. B. McCrary & Co., Consulting Engineers, Atlanta, Ga., will prepare plans for \$60,000 worth of sewer, street and water improvements.

**Mobile, Ala.**—The Board of Public Works has instructed Engineer Smith to draw up plans for the permanent drainage and paving of South Conception st.; a drainage scheme for the northwestern portion of the city has also been outlined.

**Tuscumbia, Ala.**—A force of surveyors is at work in this city making a preliminary survey and estimate of the cost of laying sewers on several of the business and residence streets, so that Council can intelligently consider the advisability and propriety of issuing bonds for the building of sewers.

**Lodi, Cal.**—The election held for the purpose of voting bonds for sewer, light and water plants has been declared legal by the Supreme Court.

**San Diego, Cal.**—City will extend sewer and water system to Ocean Beach; water system of Point Loma will also be enlarged; total cost, \$100,000.

**Hartford, Conn.**—State Senate has passed the bill authorizing this city to issue \$300,000 bonds for the East Side intercepting sewer.

**Naugatuck, Conn.**—Town has voted to extend the Cherry st. sanitary sewer to the passway over the Long Meadow brook.

**Atlanta, Ga.**—Preliminary report has been submitted by Rudolph Hering, Sanitary Engineer, New York, on construction of sewer system; estimated cost, \$1,670,000; work will include construction of three septic tanks, extension of trunk sewers to tank sites, building of intercepting sewers and erection of pumping stations.—R. M. Clayton, City Engineer.

**Bridgeville, Del.**—Because all bids for installing water works and a sewerage plant were higher than the Town Commissioners had planned to spend, new plans and specifications will be drawn.

**Washington, D. C.**—Engineer Commissioner Judson has ordered the following sewer improvements: In Piney Branch road and 6th st.; in Reservoir st., between 34th st. and Wisconsin ave.; in Ninth st. northeast, between B st. and Massachusetts ave.

**Cuthbert, Ga.**—City is considering an election on bond issue for sewerage system, artesian wells, removal of power plant, electric lights, water works, erection of school buildings, new City Hall and Fire Department headquarters.—D. A. McPherson, Mayor.

**Moultrie, Ga.**—City has sold \$50,000 sewer and water works bonds to Robinson-Humphry Co., of Atlanta.

**Prophetstown, Ill.**—Contracts will be let the latter part of July for sewers in two districts; cost, about \$20,000.—Wm. Mathis, Secretary Board of Local Improvements.

**Springfield, Ill.**—Contract will be let the latter part of July for sewers on Douglas ave.; about 1,350 ft. 18-in. pipe will be needed; also for 500 ft. 12-in. inlet pipe and two manholes.

**Springfield, Ill.**—City is considering con-

struction of sewers in Carpenter st. and Douglas ave.—Frank H. Hamilton, City Engineer.

**Sycamore, Ill.**—The Board of Public Works will construct a gravity sewer system; bids will be received about August 1.—Walter Hayes, Chairman.

**Bremen, Ind.**—W. S. Moore, Consulting Engineer, Mishawaka, is preparing plans for the construction of a sewer system.—Frank Knoblock, Town Clerk.

**Greencastle, Ind.**—The plans and specifications for a proposed sewer system have been laid before the State Board of Health.

**Hammond, Ind.**—Council has adopted a resolution for lowering the Sibley st. sewer.

**Indianapolis, Ind.**—Following a conference with Mr. Fuller, of Hering & Fuller, New York engineers, Mayor Bookwalter stated he would have an ordinance introduced in Council appropriating \$2,500 to be used in employing expert engineers in connection with the sewage disposal question; Mr. Hering was the engineer who designed the local sewerage system several years ago and the city may negotiate with his company when it is ready to employ experts: "It is necessary to lay out a line of work, determine the bacterial contents of the water in White River and investigate the levels in connection with the present and proposed systems," said the Mayor; the Mayor said that even although he would not get to build the permanent plant, he hoped to have plans in readiness for his successor. It is possible that an experimental plant may be started this year.

**Ames, Ia.**—Council has voted to construct an 8-in. sewer on Kellogg and Washington aves. and Grant st.

**Davenport, Ia.**—Citizens will vote on \$35,000 bonds for the construction of a sewer system in Bettendorf.

**Decorah, Ia.**—Plans for a sewerage system, consisting of a septic tank, sand beds and about ten miles of sewer have been prepared; cost about \$75,000.

**Denison, Ia.**—City has decided to construct a sewer to include 780 ft. of 8-in. vitrified sewer pipe.—Alfred Wright, City Clerk.

**Atchison, Kan.**—Plans are being prepared by City Engineer S. K. McCrary for sewer No. 1; cost \$45,000; City Clerk C. T. Hawk will receive bids very soon.

**Atchison, Kan.**—City is considering construction of a vitrified pipe sewer at St. Benedict's College.—C. T. Hawk, City Clerk; S. K. McCrary, City Engineer.

**Horton, Kan.**—Engineer W. D. Hazen, St. Joseph, Mo., has prepared plans and will let contract about August 1 for 2,300 ft. of 13-in. pipe sewer and the construction of a septic tank.

**Leavenworth, Kan.**—Plans are being prepared by City Engineer Joseph O'Neill for sewer No. 9; 5,000 ft. of 10 and 15-in. vitrified pipe will be needed; cost \$6,000.—J. H. Kirmeyer, City Clerk.

**Mansfield, La.**—Mansfield Female College has issued \$20,000 bonds for various improvements, including construction of sewer system.

**Holyoke, Mass.**—Estimates are now being made of the probable cost of supplying the annexed territory with sewers, gas, electricity and walks; nothing is likely to be done toward furnishing these conveniences this year, but it is thought that the improvements will be made gradually; estimated cost of the water, gas and electric extensions is placed at from \$50,000 upwards; this will bring the total cost of the annexed section to the city up to \$102,000 if Northampton accepts the \$45,000 award made to it by the Legislature; city still has nearly a week in which to appeal from the award of the Legislature.

**Detroit, Mich.**—Council has directed the Department of Public Works to advertise for proposals for the construction of five lateral sewers of vit. crock through alleys.—J. J. Haarer, Commissioner.

**Granite Falls, Minn.**—Council has received a petition for a sewer on Prentice st.

**Kansas City, Mo.**—Board of Public Works has approved plans for main sanitary sewer on Grand ave.; cost \$10,000; bids for construction will be invited.

**St. Joseph, Mo.**—Assistant City Engineer W. K. Seitz has completed plans for a number of sewers; bids will be received soon.

**Hebron, Neb.**—Preliminary surveys are being made for a sewer system.—O. P. Hess, City Clerk.

**Osceola, Neb.**—Town will vote on \$10,000 bonds for a sewer system.

**Stanton, Neb.**—Citizens are urging installation of a sewer system.

**Winnemucca, Nev.**—Citizens have authorized bond issue for the construction of a sewer system.

**Manchester, N. H.**—The Board of Aldermen has received seven petitions for sewers and drains.

**Atlantic City, N. J.**—Bids will be received July 26 for the construction of a part of

the storm water drainage system; work consists of approximately 76,650 lin. ft. of brick, brick and reinforced concrete and terra-cotta drains from 10 in. in diameter to 8 ft. wide, with manholes, etc.—E. D. Rightmire, City Engineer; T. Chalkley Hatton, Wilmington, Del., Consulting Engineer.

**Bloomfield, N. J.**—Town Council has passed ordinance to drain State st. at a cost of \$700.

**South Amboy, N. J.**—S. J. Mason will prepare plans for a system of sewerage.

**Trenton, N. J.**—Council has passed ordinances providing for the construction of sewers on Titus ave., Howard st., Ward ave., Cummings ave., Chase st. and Exton and Virginia aves.; Park Board has asked for a \$2,500 appropriation for the installation of sewer connections at Cadwalader Park.

**Washington, N. J.**—Town will vote July 26 on \$60,000 bonds for the construction of a disposal plant.

**Batavia, N. Y.**—Citizens have voted to install a complete system of sewers at a cost not exceeding \$2,375,000.—Rudolph Hering, of New York City, Engineer.

**Cortland, N. Y.**—Clayton ave., from Hill st. to the west line of the Randall tract, has been accepted as a city street, and sewers have been ordered installed therein; sewers have also been ordered placed in Oswego st., Squires st., Frank st., Crawford st., Pomeroy st. and Broadway.

**Flatbush, N. Y.**—The Local Board has voted to give Bath Beach a sewer system; resolution adopted calls for a sewer in Bath ave. from 23d ave. to Bay 25th st., thence to Benson ave., to Stillwall ave. and Ave. V., and to the proposed pump well between West 10th and West 11th sts.

**Oneida, N. Y.**—The Board of Public Works has authorized the City Clerk to advertise for bids on the 500-ft. sewer to be built in Cottage place and also the sewer to be built in Belmont ave.

**Defiance, O.**—City will expend more than \$125,000 this coming summer and fall in building and construction work; \$66,000 bonds have already been sold and an additional \$27,000 will be sold for the Wayne and Francis st. sewer improvements and for other work.

**Delaware, O.**—The Sanitation Committee and City Engineer have been ordered to correspond with an expert engineer to get prices for preparing plans and specifications for the construction of a disposal plant; cost about \$25,000.—A. J. Arehart, Chairman Sanitary Committee.

**Hamilton, O.**—Council is considering an ordinance instructing the City Engineer to prepare plans and estimates for a sanitary sewer on North E st., between Millville and Elvin aves.; on North 9th st., Prospect Hill and Gordon ave.

**Steubenville, O.**—Council has adopted a resolution for improving Lake Erie ave. from north line of the McGowan Bros. Co.'s property line to Washington st. by the construction of a storm and sanitary sewer.—John J. Dillon, President Pro Tem.

**Youngstown, O.**—The State Board of Health has granted permission to build an outlet for the Poland ave. sewer, provided the city submits plans for a sewage disposal system by Jan. 1, 1910.

**Franklin, Pa.**—Plans for the proposed sanitary and storm sewer in the borough of Silverly have been accepted by the State Department at Harrisburg, and Council has given the ordinance providing for its construction two readings. Storm sewer will be on Oakgrove, 1st, 2d, 3d and 4th sts., Imperial, Plum, Liberty, Martin and Siverly aves. and through the Oil Well Supply Co.'s property; sanitary sewer will be on the streets in the highland.

**McKeesport, Pa.**—City Engineer Smith has been instructed to submit to Council as soon as possible a report as to what will be necessary in order to sewer the 9th and Eleventh Wards, complying with the State Board of Health regulations; this was done after a resolution to prepare plans for a surface water sewer for the Eleventh and a portion of the Ninth Ward was amended to read "sanitary sewer" and to provide for the entire wards.

**Philadelphia, Pa.**—The Twenty-first Ward Board of Trade has adopted a resolution calling upon Public Works Director Stearns to try and arrange for the building of a sewer along the west bank of Wissahickon Creek, from Walnut Lane bridge to the county line.

**Reynoldsville, Pa.**—Borough is considering the construction of a sewage disposal plant.

**Central Falls, R. I.**—Council is considering resolutions to appropriate \$9,000 for the building of a sewer on West Hunt St.; \$1,800 for the building of a sewer on Dexter st. and \$800 for the laying of another pipe on Liberty st.

**Charleston, S. C.**—Citizens have voted \$400,000 bonds for completion of sewer system.—J. H. Dingle, City Engineer.

**Franklin, Tenn.**—Citizens have voted \$35,000 bonds for extension of sewerage and water works systems.

**Trenton, Tenn.**—Citizens will vote August 3 on \$20,000 bonds for sewer construction.

**Highland Park, Va.**—Citizens will vote July 14 on \$50,000 bonds for sewerage and water supply and electric lights.

**Bellingham, Wash.**—The City Engineer has estimated cost of connecting the Elk st. septic tank with the trunk sewer at York and Elk sts. at \$5,447; a 24-in. vitrified pipe, 200 ft. long, would have to be laid; cost about \$12 per ft.

**Tacoma, Wash.**—Council has adopted an ordinance providing for the construction of sanitary sewers in District 189.

**Independence, Wis.**—Citizens have voted bonds for the construction of a sewer system.

**Oshawa, Ont., Can.**—Aird Murray has submitted to the Town Council a report in favor of a biological system of sewage disposal; estimated cost from \$10,000 to \$12,000.

## BIDS RECEIVED AND CONTRACTS AWARDED

**Ontario, Cal.**—David Joy has secured contract at \$9,000 for constructing lateral sewers in all alleys in this city.

**Oakland, Cal.**—Because his written proposal was not intelligible a contractor lost a job of sewer work. The contract for putting in the storm sewer outlet from Fallon and 12th st. emptying into the lake north of the 12th st. dam was let to the Contra Costa Construction Co. at \$2,258.20 for the sewer work complete. The contract for the culvert on Temescal Creek and Maple st. was awarded to the Contra Costa Construction Co. at \$1,740.90 for the sewer work proper, the figures of that company for the whole job showing it to have the lowest bid. A bid was offered by J. Thomas which was on the typewritten and printed form provided by the city but which had evidently not been understood, as he made his offer for the work \$1,740. Though it was explained that this bidder had intended to make his figures for lin. ft. the Board could not read his intention into the proposal. Thomas had another bid on the next contract which was in the same condition, and it likewise went to one side. Burnham & Co. got the contract for putting in the sewer at Temescal Creek and Hardy st. at \$2,031 for the sewer work proper. There was a close contest between that firm and the Piedmont Paving Co., the difference in the figures on the rock work and excavation making the difference in the total cost less than \$25. The Piedmont Paving Co. was awarded the contract for a sewer in Beach st. from 32d st. north, which will cost in the neighborhood of \$2,000.

**Bridgeport, Conn.**—Director Biltz has awarded construction as follows: Noble ave., 350 ft. between East Washington and Barnum aves., the Burns Co., \$1.60 per ft.; Worth st., 60 ft., B. D. Pierce, Jr., Co., 60c. per ft.; Fox st., 600 ft., Pierce Mfg. Co., 80c. per ft.; Norman st., 370 ft., Pierce Mfg. Co., 57c. per ft.; Freeman st., 600 ft., E. T. Doolittle, 74c. per ft. The Burns Co. was the lowest bidder on the construction of the 1,550 ft. long trunk sewer in Lindley st. at 80c. per ft., but the award was not made because of a question of size of the proposed sewer. The matter will be taken up by the Street Committee.

**Harrisburg, Ill.**—The Reeb Bros. Construction Co., of Belleville, has secured contract for constructing sewers for about \$35,000.

**Harvard, Ill.**—The E. R. Harding Co., Racine, Wis., has secured contract at \$29,374, for constructing a sanitary sewer system, to include 12,970 ft. 6-in., 17,900 ft. 8-in., 4,660 ft. 10-in., 6,812 ft. 12-in., 990 ft. 15-in. and 2,510 ft. of 18-in. tile sewer, and Logan & Giertz, Elgin, Ill., at \$10,800, were awarded contract for the filter beds and tanks.

**Marshall, Ill.**—Contract for constructing 2.2 miles of reinforced concrete and vit. pipe sewers has been awarded to R. H. McWilliams, of Mattoon, for \$18,941.

**Angola, Ind.**—Michaels & Minnick, of Marion, have secured contract for constructing main sewer and disposal plant for \$27,742.

**Elkhart, Ind.**—For the construction of seven sewers proposals were received by J. M. Fishley and the Northern Construction Co., being the only bidders. Mr. Fishley was awarded contracts for building the sewers: On Prairie from Main to Aspenwood ave., \$684.10; on 4th st. from Harrison to first alley south, \$183.75; on Michigan st. from Mishawaka rd. north to city limits, \$2,722.80; on Indiana ave. from Prairie to Eden and in Eden and Kinzie sts., \$2,368.30; on East Beardsley ave. from Cassopolis st. to the E. & W., \$974.60; on South 6th st. from Indiana ave. to Garfield ave. and in Garfield ave. from South 6th st. to

Prairie st., \$4,549.18. The Northern Construction Co. was awarded the contract for a sewer in Simonton st. from Cassopolis st. west to the west line of Oakwood addition, \$2,957.30.

**Rushville, Ind.**—The County Commissioners have let the contract for building the Kirkpatrick pike No. 1, Center Township, to Benjamin W. Goff, of Tipton, at \$7,500; pike No. 2 will be built by Hayes & Midkiff, of Knightstown; contract price, \$2,500.

**Topeka, Kan.**—Bids were received for the construction of sewer in sewer district No. 32, from the McGuire and Stanton Construction Co. and James Ramsey and Chas. F. Rice, and contract was awarded The McGuire & Stanton Construction Co., of Leavenworth.

**Grand Rapids, Mich.**—Contract for construction of a sewer in George and other streets has been awarded to Peter DeWitt for \$5,320.

**Grand Rapids, Mich.**—McDermott & Cooper have been awarded contract by the city at \$18,433, for the construction of a sewer in Alpine ave.

**Linden, N. J.**—The Harrison Construction Co., Newark, N. J., has received contract for constructing No. 1 main trunk sewer, 20-in. pipe, about 15,700 ft. long, and Wade & Callahan, Elizabeth, N. J., were awarded contract for constructing sub-trunk sewers, consisting of about 13,300 ft. of pipe.—Jacob L. Bauer, Elizabeth, Engineer.

**Clovis, N. M.**—Marshall Bros., of Las Animas, Col., have secured contract for constructing sewer system for \$29,300.—Burns & McDonnell, of Kansas City, Mo., Engineers.

**Durham, N. C.**—The J. E. Dickson Co., of Durham, has received contract to construct a sewer system to connect the new hospital with city lines; estimated cost, \$10,000.

**Cincinnati, O.**—Bids accepted by the Board of Public Service are as follows: Sewering right of way from existing sewer in Dexter ave., east of Annwood ave., to the intersection of Section ave. with Lake ave., G. M. Gest, \$7,141.40; seweraging Vaughn st., from University ave. to Daniels st. and Daniels st. from Vaughn st. to existing sewer in Daniels st., west of Eden ave., Connelly Construction Co., \$1,379.60; seweraging the ravine east of Dane st., from the south end of the 10-ft. culvert under Spring Grove ave. to Millcreek, John E. Mahoney, \$2,431.68; sewer in Probasco ave., from Clifton ave. to Marshall ave., A. J. Henkel, \$8,552; sewer in Renner st., from North Elm st. to angle west of Hamburg st., John E. Mahoney, \$2,061; seweraging ravine and right of way from the west end of existing sewer in St. Leger pl. to the east end of existing sewer at the west line of Suisar st., Douglas Plumbing & Heating Co., \$1,648.50.

**Ironton, O.**—The Board of Public Service has let the contract for the building of the Pine st. sewer to the Ironton Construction Co., Mountain & Mulligan, proprietors, who were the lowest bidders; a bond of \$13,500 was required for the completion of the sewer according to plans and specifications by Jan. 1, 1910.

**Middletown, O.**—The Board of Public Service has awarded contract to John Arpp, Jr., city, for constructing pipe sewers in Curtis and Grand ave.—John Kunz, Clerk.

**Newburgh, O.**—The Water Works Construction Co., Cleveland, has been awarded contract, at \$15,040, for constructing sewers in Buckley rd. and other sts.; bids were opened by the city on June 7.

**Lancaster, Pa.**—Bids were opened for sewers on Rockland st., from Junta to the public school, and on Plum and Lemon sts., from Franklin st. to New Holland ave. J. U. Fritchey & Son and F. X. Hinden put in proposals for both sewers and Herman Schweers put in a bid for the Rockland st. sewer.

**Knoxville, Tenn.**—The Concrete Block & Paving Co. has been awarded the contract on five districts by the Board of Public Works, and will place its entire sewer crew at work on the different districts at once, so the sewer work will not delay the paving that is to be laid on the street. This company is now completing the Armstrong ave. sewer and also the Euclid ave. sewer, for which it was awarded the contract several days ago. The sewer work of the company is in charge of J. Edgar Thompson, who was Assistant City Engineer under S. D. Newton more than a year.

**Houston, Tex.**—Horton & Horton have secured contract for constructing the 9-ft., 8-ft. and 7-ft. sections of the Austin st. sewer for \$38,369, \$28,650 and \$19,745, respectively, bids opened June 14; all bids received for the 10-ft. section were rejected and new bids will be received; this portion of the contract will amount to about \$75,000.—Daniel C. Smith, City Comptroller; F. L. Dormant, Consulting Engineer.

**Appleton, Wis.**—Green & Sons Co., Appleton, have been awarded contract at \$28,000 for constructing sewer in ravine from Lawrence st. to the Fox River. William Wendlandt, Appleton, has been

awarded contract for a sewer in Ontaganon st.

**Moose Jaw, Sask., Can.**—McVean & Craig, Prince Albert, have been awarded contract at \$20,777 for sewers and water works for this city; work includes the labor and materials for 15,000 lin. ft. 8-in. sanitary sewer and 6-in. c.i. water main.

## WATER SUPPLY

**Calera, Ala.**—A new company has applied to the Board for a franchise to lay mains and to supply water in Calera; standpipe will be located on the highest elevation of the property of the Calera Terminal Co. just east of the Alabama Mineral Railroad and the union passenger depot and not far distant from the same; ample fire protection as well as water for domestic purposes will be afforded to the entire city.

**Dothan, Ala.**—J. B. McCrary & Co., Atlanta, Ga., will prepare plans for water, street and sewer improvements; cost, \$60,000.

**Mobile, Ala.**—Mayor P. J. Lyons has instructed Wright Smith, Engineer of the Board of Public Works, and his assistants to make survey and plans of the watershed of the city water works with the immediate improvement in accordance with the Mayor's recommendations.

**Downieville, Cal.**—City will install a high pressure water main for fire purposes.

**Lodi, Cal.**—The election held for the purpose of voting bonds for water, light and sewer plants has been declared legal by the Supreme Court.

**San Francisco, Cal.**—All present legal barriers to the Hetch-Hetchy municipal water supply scheme were removed by Judge Seawall, who dissolved the injunction prohibiting the disposal of the bond issue authorized at the last general election. Immediately the first allotment of \$240,000 was sold to the James H. Adam Co., of Los Angeles, at a premium of \$3,000. The city is victor at every point.

**South Norwalk, Conn.**—Issue of water bonds lately advertised for sale received but two bids, the highest being 100.58; Commissioners have since disposed of them at private sale to local banks; the South Norwalk Trust Co., \$100,000, at 101.00 and the Norwalk Savings Society, \$61,000, at 101.00.—F. A. Smith, Commissioner.

**Washington, D. C.**—Upon motion of Engineer Commissioner Judson, the Commissioners have issued the following orders: That the following water mains be laid and service sewers constructed: Two hundred and fifty ft., more or less, of 8-in. water main in Girard st. east of 30th st. northeast; 265 ft., more or less, of 8-in. water main in Q st. east of 28th st. northwest; sewer in Madison st. and Shepherd road, between 5th and 8th sts. northwest, abutting lots 9 and 12, inclusive, 15 and 17 to 20, inclusive, of square 3,154; lot 800 of square No. 3,155, lots 1 to 10, inclusive, of square 3,206, and lot 600 of square 3,261. That the following water mains be laid and service sewers constructed: Eight hundred and eighty ft., more or less, of 8-in. water main in Yuma st. between Wisconsin ave. and 42d st. northwest; 315 ft., more or less, of 8-in. water main in L st. between 9th and 10th sts. northeast, and 315 ft., more or less, of 8-in. water main in Kent place between 9th and 10th sts. northeast.

**Washington, D. C.**—Engineer Commissioner Judson has ordered the following water main improvements: 325 ft. of 8-in. water main in E st., between 12th and 13th sts. northeast; 205 ft. of 8-in. water main in 16th st., between G st. and Kentucky ave. southeast; 350 ft. of 8-in. water main in Woodley road west from Connecticut ave. northwest; 290 ft. of 8-in. water main in the east side of Kentucky ave., between G and D sts. southeast; 2,080 ft. of 12-in. water main in Shepherd st., between Georgia ave. and 14th st. northwest.

**Cuthbert, Ga.**—City is considering an election on bond issue for water works.—D. A. McPherson, Mayor.

**Moultrie, Ga.**—City has sold \$50,000 water works and sewer bonds to Robinson-Humphry Co., of Atlanta.

**Bloomington, Ill.**—City will soon ask bids for improving the water works system.—Address Mayor Carlock.

**Columbia, Ill.**—City has selected George Cadogan Morgan, of Chicago, to prepare plans, etc., and report on the advisability of installing water works and a sewer system.

**Richmond, Ind.**—Wernie Orphans' Home is urging the extension of the city water mains.

**Lorimer, Ia.**—Citizens will vote July 20 on \$12,000 bonds for the construction of a water works system.

**Pella, Ia.**—Citizens have voted favorably upon municipal ownership of the water works system.

**Dickinson, Kan.**—City has decided to extend its water works system.

**Marion, Kan.**—Plans are being prepared

by Burns & McDonnell, of Kansas City, Mo., for water works; cost, \$60,000.

**Russell, Kan.**—Citizens will vote July 21 on \$65,000 bonds for water works.—Burns & McDonnell, of Kansas City, Mo., Engineers.

**Lexington, Ky.**—City is considering purchase of water plant.

**Peak's Mill, Ky.**—Council has passed an ordinance for the construction of a water works system and an electric light plant; cost \$40,000.

**Alexandria, La.**—Council has authorized additional issue of \$45,000 bonds to extend and improve water works and electric plant.

**Richardson, La.**—City has decided to construct water works; cost \$5,000.

**Hancock, Md.**—John J. Hetzel, Martinsburg, W. Va., will establish a water works; reservoir to be on Round Top Mountain; water to be supplied by gravity.

**Holyoke, Mass.**—Estimates are being made of the cost of supplying the annexed territory with water, gas and sewers; improvements will be made gradually; at least \$50,000 will be expended.

**Lynn, Mass.**—Engineer Leland has completed surveys for the proposed new water basin in the natural ravine near Vinegar Hill; estimates will be ready in about a week.

**Anoka, Minn.**—Citizens have voted \$50,000 bonds for the purchase of the water works.

**Anoka, Minn.**—Citizens have voted to purchase the water and electric light plant; \$20,000 will be spent in improvements.

**Canby, Minn.**—Citizens have voted \$20,000 bonds for the construction of a water system.

**Lyon, Miss.**—W. S. Bobo, Clarksburg, Miss., is preparing plans for water works.—J. B. Sanford, Mayor.

**Vicksburg, Miss.**—City will award contract within 30 days for laying water mains on Cherry st. in connection with paving of that street.

**Mexico, Mo.**—Citizens have voted to grant a water works franchise to the Mexico Water Works Co.—Wallace Dearing, City Clerk; Wm. H. Bryan, Lincoln Trust Bldg., St. Louis, Consulting Engineer.

**Livingston, Mont.**—Council has been petitioned for the extension of water mains on several streets.

**Melstone, Mont.**—D. J. Smith, Forsyth, is considering the installation of a water works system.

**Valentine, Neb.**—Bids will be received about August 1 for the construction of water works and an electric light plant; cost, \$40,000.—A. M. Morrissey, Village Clerk.

**Belleview, N. J.**—Refused permission by the New Jersey State Water Supply Commission to send Belleville well water to Staten Island through pipes also carrying Passaic River water, the Hudson County Water Co. has announced that it will lay a new 30-in. pipe line 15 miles long; it will begin at the wells in Belleville north of Newark, and will extend to the point of intake at West New Brighton, Staten Island.

**Collingswood, N. J.**—A Physical Engineering Committee has been appointed by citizens to consult competent engineers looking toward a water supply for the town.—Wm. Wyand, Chairman.

**Elmer, N. J.**—Voters have decided, by one majority, the proposition to issue \$30,000 bonds for the installation of a municipal water plant.

**Hoboken, N. J.**—Bids will be received July 28, 4 p. m., for \$22,000 water bonds.—J. H. Londrigan, City Clerk.

**Perth Amboy, N. J.**—A recommendation of Superintendent Crowell that the 6-in. water main be extended from Neville st. north through Cornell st. to Brace ave., a distance of 1,200 ft., to the intersection of the present line at Pacific ave.; also for the extension of the 6-in. main in Lynde st., from State to Parker st., a distance of 800 ft., is being considered by the Board of Commissioners; Superintendent Crowell, on a requisition, has been authorized to order a carload of 6-in. pipe and six Corey hydrants.

**Brooklyn, N. Y.**—The Board of Estimate has appropriated \$623,356 for an additional supply of water for fire protection in the Bushwick, Stuyvesant, Broadway-Eastern and Park Slope districts of Brooklyn.

**Long Island City, N. Y.**—As a result of the appropriation of \$340,000 by the Board of Estimate and Apportionment, several important improvements are to be made in the Long Island City water system; appropriation will be used to extend the large main of the Citizens' Water Co. from Station No. 3 along the Hoffman Boulevard for a distance of five miles into Long Island City; besides the extension of the main the money will be used to improve the distributing system in Long Island City proper; about 10 miles of main will be installed, ranging in size from 30 ins. down to 16 ins. diameter; water supply of Long Island City can be enlarged 5,000,000 gallons daily upon the completion of the new mains.

**Newburgh, N. Y.**—Geo. W. Fuller, New York, Consulting Engineer on the proposed water works improvements, has recommended the following: That the proposed 30-in. main at its lower end should pass through the existing right-of-way; then turn to the left where the right-of-way crosses Little Britain road; then cross Washington st. and pass through an adjacent cross street, make a right angled turn in Western avenue, and continue to a connection with the existing main; that there should be a 30-in. Venturi meter, located preferably just below Monell reservoir, at such a point that the meter will be at least 24 ft. below the hydraulic grade line; that the cast-iron pipe be furnished by the Water Commission, and the specifications should provide for all joints to be made in the presence of an inspector; contractor should also baul and place the pipe; that the Calyer gate house should be raised and utilized; grooves for a double set of screens should be placed in the interior chamber of the house; the outer grooves should be used for receiving planks and open frames, the planks and frames being so arranged during operation that water may be drawn from any desired level down to elevation 8 to 10; that boiler house and boiler should be raised so as to be above the new high-water level, and in order to provide against tastes and odors from the water, provision should be made for aeration; this can be done by the construction at the eastern edge of the Lockwood basin of a system of pipes and nozzles, channels, weirs and steps, through and over which the water will be discharged into a pool. The water at the higher levels can be discharged through the nozzles—that from the lower levels over the weirs; in order to control the flow of water, a gate house should be built at the pool, to which should be connected the 24-in. pipe from the old gate house and the two 16-in. pipes from the Calyer gate house. In this gatehouse should be placed screens for screening the water from the old gate house; cost of such a gate house, including the aerating arrangement, will probably be about \$15,000.

**Seneca Falls, N. Y.**—Specifications are being prepared by Morrison & Farrington, of Syracuse, for construction of the proposed water works: \$240,000 bonds are available.

**Syracuse, N. Y.**—The Board of Contract and Supply will advertise for proposals to lay a pipe line across the city connecting the city water standpipe with University Hall.

**Cincinnati, O.**—Another step toward securing water from Cincinnati for use in the villages below Anderson's Ferry has been taken. Definite plans are being made, and a committee will be selected to confer with the authorities, who will be requested to lay water mains to the villages of Delhi, Home City, Fernbank, Addyston, North Bend and Cleves.

**Dayton, O.**—Plans are under way at the Soldiers' Home for the installation and construction of a complete water works system, including supply wells, and in the event the present plans are materialized the contract with the city for furnishing water to the Home will not be renewed next year.

**Mt. Vernon, O.**—The Board of Public Service has recommended the extension of water mains throughout the city; about 32,050 ft. of pipe will be needed: cost, \$9,804.66; also 12,425 lbs. of specials, \$372.75; five 6-in. valves, \$60; 50 4-in. valves, \$400, and 30 hydrants, \$750.

**Pleasant Ridge, O.**—Bids will be received August 2, noon, for \$4,500 bonds for the purpose of improving the water supply, purchasing and laying water pipe and erecting fire hydrants.—W. C. Davies, Clerk.

**Granite, Okla.**—City will soon adopt plans and specifications for \$30,000 water works plant: \$45,000 bonds are available.

**Minco, Okla.**—Citizens will vote on \$10,000 water extension bond issue.

**Okemah, Okla.**—Plans are being prepared by Engineer M. A. Earl, Muskogee, for a system of water works and electric light plant; cost, \$50,000.

**Oklahoma City, Okla.**—City has voted \$150,000 bonds for the extension of water mains over the entire city.—W. C. Burke, City Engineer.

**Spiro, Okla.**—Citizens have voted \$50,000 water works bonds.

**Waynoka, Okla.**—Citizens are considering construction of a water works system.

**Eugene, Ore.**—City Council has decided to lay 10-in. wooden water main on Columbia ave. from East 13th st. to East 15th and Walnut.

**La Grande, Ore.**—City will install a \$100,000 water system; project was authorized at a recent election.

**Coudersport, Pa.**—Citizens are considering either purchase of present water works or the construction of a municipal system.

**Monongahela, Pa.**—City will purchase a water gauge, with which to test every plug in the town at certain periods.

**Philadelphia, Pa.**—City has transferred the sum of \$700,000 from the Public Safety Department for the purpose of completing the fire main systems in Kensington and alterations to the Fairhill reservoir.

**Pittsburg, Pa.**—The National Board of Fire Underwriters has recommended that a reservoir be built on the high land east of the Lincoln land; also that an additional main be laid for a portion of the distance between Brilliant station and the Highland reservoir, and that a recording gauge be installed at some convenient point in the low service area.

**Pottstown, Pa.**—In order to supply more pressure for fire protection, Pottstown's water company will elevate its old reservoir 10 ft.

**Wilkes-Barre, Pa.**—The School Board is considering the installation of a perfect filtration system in the new high school.

**Providence, R. I.**—The Board of Contract and Supply is considering the matter of installing a new pumping engine at Hope reservoir with a capacity of 10,000,000 gal.

**Lexington, S. C.**—A special committee, S. J. Leaphart, Chairman, has estimated cost of constructing water works and electric light plant at \$15,000.

**Doland, S. D.**—Citizens have voted to issue \$7,000 bonds for extension of the water works.

**Leemon, S. D.**—Citizens have voted \$25,000 bonds for a water works system.

**Murdo, S. D.**—Citizens have voted \$12,000 bonds for a water works system.

**Chattanooga, Tenn.**—The Water Works Commission has engaged Walter G. Kirkpatrick, Jackson, Miss., to prepare plans and specifications for new municipal system of water works; bonds authorized, \$900,000; supply probably from Tennessee River, with mechanical filtration, pumping to reservoir, and gravity distribution through cast-iron mains; also a separate high-level system.

**Franklin, Tenn.**—Citizens have voted \$35,000 bonds for extension of water works and sewerage systems.

**Johnson City, Tenn.**—Plans for new municipal system will be made by W. M. Dunning, City Engineer, and Walter G. Kirkpatrick, Consulting Engineer, Jackson, Miss.; probable cost, about \$250,000; gravity supply from springs, with reservoir and distributing mains.

**Amarillo, Tex.**—Charles A. Loomis, General Counsel of the American Water & Light Co., of Kansas City, proposes that his company will build and finance a plant which will furnish to Amarillo a daily supply of approximately 4,000,000 gallons of water at a very low rate.

**Beaumont, Tex.**—Mrs. C. O. Wilson, San Antonio, has decided to expend \$10,000 in installation of additional machinery in water plant.

**Colorado, Tex.**—City is considering construction of dam to impound waters of Lone Wolf Creek; lake will be three-quarters of a mile long, from 100 to 300 yds. wide and from 15 to 20 ft. deep.

**Dallas, Tex.**—City has sold \$475,000 water bonds to the Trinity National Bank, and \$25,000 to Judge G. W. Kiddle.

**Fort Worth, Tex.**—Engineer D. C. Griffin of the Water Department is working out a plan for a dual water system for the fire district, which provides that all downtown hydrants be connected directly with the river; that water from this source may be used for street sprinkling and fire extinguishing, thus reducing the consumption of artesian water and leaving an ample supply for drinking purposes; plan of Engineer Griffin to install a dual system for fire and street sprinkling purposes will soon be submitted to the Commission, possibly at its next meeting; in event it is adopted, the engineer says the artesian water supply will then be ample for a city of 100,000 inhabitants, as it will be used only for household purposes; extension of the water mains to the recently annexed suburbs render it almost imperative that some steps be taken to insure pure drinking water unmixed with the stagnant water from the river.

**Rogers, Tex.**—City is considering an election on bonds for construction of water works.

**Tyler, Tex.**—City will lay about 2 miles of mains.—John H. Bonner, Mayor.

**Springville, Utah.**—City will install water works at a cost of about \$30,000.—R. E. Caldwell, of Salt Lake City, Engineer.

**Highland Park, Va.**—Citizens will vote July 14 on \$50,000 bonds for water works, sewer system and electric light plant.

**Seattle, Wash.**—Plans are nearly finished for a third pipe line with a capacity greater than the combined capacity of the two existing lines; proposed line will be by a different route and at a higher level, with a concrete conduit to an artificial lake east of Renton, with three supply pipes from

the lake to the city reservoirs; work will cost \$3,500,000.

**Princeton, W. Va.**—The Princeton Water Works has been incorporated with \$30,000 capital stock by Isaiah Bee, of Princeton; M. J. Cork, S. P. Beck, O. O. Cooper and John W. Graham, all of Hinton, W. Va.

**Oconomowoc, Wis.**—Bids will be advertised for the laying of water mains on Anderson st.

**Toronto, Ont., Can.**—Council has decided to procure new bids for 30,000 ft. 12-in. water mains.

**Vernon, B. C., Can.**—The Ratepayers have approved a by-law to raise \$75,000 by debentures for the extension of the water works system.

## BIDS RECEIVED AND CONTRACTS AWARDED

**Denver, Col.**—Contracts have been awarded by the Denver Reservoir Irrigation Co. to the Kenific-Quigley-Russell Construction Co., of Kansas City, Mo., for enlargement of the Barr Lake dam and the construction of 40 miles of canals, at a cost of about \$500,000. The contract provides for raising the dam 10 ft., which will give a storage capacity of 10,000 acre-feet and will bring under irrigation a large tract of new land in the Denver-Greeley Valley irrigation district. In connection with this project the Rosser & Whitaker Construction Co., of Minneapolis, Minn., is working on the O'Brien canal, which will be the intake for the Barr reservoir. It extends from the Platte River at a point just outside of city limits of Denver to the reservoir.

**Ft. Collins, Col.**—All bids opened by Council, June 21, for constructing a filtration plant of 4,000,000 gals. capacity, in connection with the water works, have been rejected and new bids will be received July 16; the following are the bids received: (a) slow sand filter, (b) mechanical: Jos. Finger, Ft. Collins, a complete, \$147,750, a without roof, \$104,000; Fisher Dempsey Construction Co., Pueblo, complete, \$121,872, a without roof, \$82,565; Holme & Allen Pipe & Construction Co., Denver, b with building, \$30,000, a \$44,000; New York Consolidated Jewell Filter Co., New York, N. Y., b complete, \$43,296, b without air wash, \$39,796; Roberts Filter Co., Philadelphia, Pa., complete concrete construction, \$32,100; without air wash, \$29,154.—Robt. S. Feeder, City Clerk.

**Washington, D. C.**—Contract for furnishing cast-iron water pipe has been awarded to Glamorgan Pipe & Foundry Co., of Lynchburg, Va.

**Jersey, Ill.**—William Moran has been awarded contract for the construction of a water main, etc., at the following prices, to wit: 595 ft. 6-in. cast-iron water main calked and finished complete, 8c.; 900 ft. excavation and back-filling trenches over water main, hydrant and service connections, 3c.; 7 lead service connections 34 ft. long, with corporations and stopcocks connected to main complete, \$14.00 each; 7 lead service connections 34 ft. long, with corporations and stopcocks connected to main complete, \$9.50 each; two 6-in. gate valves, complete in place, \$15 each; one fire hydrant, in place, complete, \$45; 14 Buffalo service boxes, in place complete, \$1.40 each; 2 valve manholes built complete, price \$24.50 each; one 8-in. by 8-in. by 6-in. Tee in place, complete, \$7; one 6-in. Tee, in place, complete, \$6; one 8-in. sleeve, in place, complete, \$6; one 6-in. plug in place complete, \$1.—William S. Welch, Clerk, Board of Local Improvements.

**Baltimore, Md.**—The lowest bid opened, June 29, by the Board of Contract and Supply for boilers to be installed in the city's pipe line pumping station, was submitted by the Edgemore Iron Works, of Edgemore, Del., for \$41,230.

**Battle Creek, Mich.**—The Board of Public Works has awarded a contract to the Union Steam Pump Co., city, for a new steam-driven pump at Goguac Lake for \$4,300; the Laidlaw-Dunn-Gordon Co., of Cincinnati, O., also submitted a bid for a duplex pump, which was not opened but was laid away for future consideration in case the pump of the local concern does not pass a satisfactory test.—W. W. Briddon, Superintendent.

**Auburn, Neb.**—The Katz-Craig Construction Co. has secured contract for constructing water works and a sewer system, including furnishing cast-iron water pipe, hydrants, valves, standpipe, etc., for a total of \$61,807.

**Clovis, N. M.**—The Mathews Construction Co. has secured contract for constructing water works and an electric light plant for \$55,000.—Burns & McDonnell, Kansas City, Mo., Engineers.

**Buffalo, N. Y.**—Commissioner Ward has recommended that the contract for installing two 30,000,000-gallon pumps in the old Massachusetts ave. pumping station of

the water works be awarded to the Holly Mfg. Co., the lowest responsible bidder, at its bid of \$229,700.

**Rensselaer, N. Y.**—Rensselaer Water Co. has let contract to Leahey & Shufelt, city, for constructing a 5,500,000-gal. reservoir.—R. L. Hinkley, Superintendent.

**Bucyrus, O.**—The making of a new 10-year contract between the Bucyrus Development Co. and the City of Bucyrus for water service for the city, after being delayed for nearly two full months, has finally been accomplished, and the way is now clear for the development company to proceed with its work of extending mains—putting in new extensions and increasing the size of mains in certain places. Thousands of feet of new main will be laid.

**Cincinnati, O.**—The Dimmick Pipe Co., city, has awarded contract for specified cast-iron pipes and special castings for the Water Works Department for \$56,581; McCarthy Bros. secured contract to lay cast-iron pipes in Spring Grove ave. for \$16,901.

**Bryant, S. D.**—Contract for constructing water works has been awarded to J. L. White, of Sioux Falls, for about \$7,700.—G. A. S. Arneson, City Auditor.

**Vermillion, S. D.**—Regents of the University of South Dakota have let contract for installing water system for fire protection and other purposes at the University to Des Moines Bridge & Iron Co., of Des Moines, Ia., for \$6,567.—Irwin D. Aldrich, Secretary.

**Mission, Tex.**—The Minneapolis Steel & Machinery Co., of Minneapolis, Minn., has secured contract for an irrigation plant, to be installed at Mission by Conway & Hoit. It will consist of a 14 and 30 x 36 in. heavy duty, cross compound, Twin City Corliss engine, 36-in. centrifugal pump, which will be mounted direct on engine shaft; 300-hp. boiler, boiler feed pump and heater. This plant will have a capacity of 35,000 gals. per minute.

**Barre, Vt.**—Bids were opened June 29 for construction of a dam and other work incidental to the completion of a storage reservoir in the town of Orange, and the contract has been awarded to Jos. Long & Co., of Boston, Mass., for \$23,895.—Jas. MacKay, City Clerk.

**Guayama, P. R.**—Bids were opened June 14 for construction of about 24 miles of main canal with appurtenant structures, including 4 tunnels and 5 reinforced concrete siphons at the office of the Department of the Interior, San Juan; the following are the lowest bids received by B. M. Hall, Chief Engineer, Porto Rico Irrigation Service: Sections 1 and 2, A. Fantauzzi, Arroyo, P. R., \$8,950 and \$7,145; Sections 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14 and 15, Arturo Ydrach, Ponce, P. R., \$14,345, \$7,275, \$7,940, \$9,615, \$8,927, \$10,740, \$14,110, \$9,490, \$30,910, \$3,700, \$10,055 and \$5,910; and Nerea Pirazzi, of Ponce, for Section 12, \$8,520.

## LIGHTING AND POWER

**Columbia, Ala.**—The A. D. Wood Power Co. is considering installation of water power electrical plant.

**Little Rock, Ark.**—The Ouachita Power Co. is considering construction of a dam 60 to 80 ft. long.—Levi Storthz, President.

**Lodi, Cal.**—The Supreme Court has declared legal election held for the purpose of voting bonds for light, sewer and water plants.

**Nevada City, Cal.**—The Middle Yuba Hydro-Electric Co. has decided to commence work at once on its projected electric plant on the Middle Yuba River, and within 80 days will be supplying power and lights at Alleghany, Forest City, Graniteville, and the Washington mining districts; the plant will have a minimum of 3,000 h.p. and a maximum of 7,500 h.p.

**North Pasadena, Cal.**—Citizens are urging that Council illuminate the summit of Monk Hill.

**Oakland, Cal.**—The West Oakland Improvement Club is urging the installation of 129 electrotliers on 16th st. from Broadway to the 16th st. depot.

**Conejos, Col.**—The power plant of the Conejos Flour Mill, which furnished electricity to the towns of Conejos and Autonito for lamps and motors, has been destroyed by fire; mill and power plant will be rebuilt at an early date.

**Monte Vista, Col.**—The Monte Vista Electric and Gas Light Co. is considering the installation of new and larger boilers.—N. H. Chapman, Manager.

**Waterbury, Conn.**—The Connecticut Co. has applied to the Board of Aldermen for permission to erect a dam on the Naugatuck River near the present distributing plant of the company.

**Fort Pierce, Fla.**—The St. Lucie Ice Co. is planning to install an electric plant at a cost of about \$8,000; work will commence about October; company has a light franchise in city.—R. White, General Manager.

**Atlanta, Ga.**—The Committee on Electric

and Other Railways has reported favorably a franchise for 50 years to the Central Georgia Power Co. to erect poles and lay conduits and use all other grants necessary to furnish in Atlanta electric power, heat and light.

**Atlanta, Ga.**—The Piedmont Power Co. has petitioned the County Commissioners for a franchise right to string high-voltage wires along 40 roads which lead into Atlanta for the purpose of bringing current power into Atlanta from its proposed generating plant at Tallulah Falls.

**Cuthbert, Ga.**—City is considering an election on bonds for removal of power plant and improvements to electric light system.—D. A. McPherson, Mayor.

**Ellijay, Ga.**—W. M. Scott, Atlanta, and Dr. Watkins, Ellijay, are planning the construction of water power electric plant for transmitting electricity to Rome, Ellijay and other cities.

**Gainesville, Ga.**—The Gainesville Railway and Power Co. has been incorporated with \$150,000 capital stock by W. A. Carlisle and others and has purchased water power on Chestatee River.

**Princeton, Ind.**—George Blackman and C. E. Schutz, of Evansville, have asked the County Commissioners for a franchise to lay a pipe line through Gibson county south from Oakland City; they represent the Vandalia Gas and Pipeline Co., which is preparing to pipe gas from the Gibson-Pike county gas fields to Evansville.

**Sullivan, Ind.**—The Terre Haute, Indianapolis & Eastern Traction Co. has asked the Town Board for a franchise to furnish the city with lights and it promises the same rates as the Sullivan Lighting Co., which has been furnishing the lights for the past two years.

**Vincennes, Ind.**—The Vincennes Western Electric Co. has been incorporated with a capital of \$10,000, to construct electric lines from Vincennes through Lawrence County, Ill., to Bridgeport, Ill.—Robt. V. Stinson, J. D. Nadeling and John D. La Croix, Directors.

**Columbus Junction, Ia.**—The McKee & Eliven Co. is considering the furnishing of electric lights to the town.

**Fairfield, Ia.**—The Fairfield Gas and Electric Co. will expend about \$25,000 in improvements.—C. H. Norwood, Fisher Bldg., Chicago, Ill., Engineer.

**Independence, Ia.**—The Arnold Co., of Chicago, Ill., Consulting Engineers, has prepared plans for rebuilding the municipal electric light plant at a cost of \$8,350; system will be changed from 133-cycle to 60-cycle, two-phase system.

**Mt. Pleasant, Ia.**—Farmers are urging the extension of the electric light and power north of the city.

**Story City, Ia.**—Council has passed an ordinance authorizing \$9,000 bonds to establish a system of electric lighting.

**Madisonville, Ky.**—City is considering plans for extensions and improvements to the municipal electric lighting plant, including the installation of a 200-kw. generator, an engine and 150-h.p. boiler.—E. B. Robards, Manager.

**Peak's Mill, Ky.**—Council has passed an ordinance providing for the construction of an electric light plant and water works system; cost \$40,000.

**Valley View, Ky.**—The Lexington Interurban & Railways Co. is planning the construction of its proposed power plant at Valley View; work will be started soon; cost of power plant, \$250,000.—I. L. Oppenheimer, General Manager.

**Alexandria, La.**—Mayor J. P. Turregano, City Engineer J. W. Sylvester and Superintendent J. H. Seaman are preparing ordinance to provide for additional bond issue of \$45,000 for extension of light and water plant and installation of new machinery in power house.

**Tallulah, La.**—City is planning to establish an electric light plant, the equipment of which will include a 75-h.p. compound engine, direct connected to a 60-kw., three-phase, 60-cycle, 2,300-volt, alternating current generator; bids will be opened about July 10.—J. E. Craig, City Engineer.

**Thibodaux, La.**—City has decided to install electric light equipment costing \$25,000.—George U. M. Borie, Consulting Engineer.

**Bridgewater, Me.**—The Bridgewater Electric Co. has been organized for the purpose of maintaining an electric light plant, with \$10,000 capital stock.—James H. Farley, Bridgewater, President.

**Rockville, Md.**—There has been a temporary halt in the arrangements for electric lighting service for the residences, churches and business establishments of Rockville because of the failure of the Washington Electric and Power Co., which proposes to furnish the current, and the Rockville Town Council to agree upon terms; company wants a free franchise for 25 years, but the best the Town Council is willing to do is to grant a franchise free of taxation for five years, after which the

town is to receive 2½ per cent of the gross receipts for 25 years.

**Holyoke, Mass.**—Estimates are being made of the cost of supplying the annexed territory with gas, electricity, water and sewers; at least \$50,000 will be expended; improvements will be made gradually.

**Lowell, Mass.**—The Joint Committee on Appropriations is considering an ordinance appropriating \$2,000 for the better lighting of Merrimac, Central, Prescott and Middlesex sts., from the City Hall to the depot.

**North Adams, Mass.**—Preliminary partial plans for the erection of the new steel structure power house of the North Adams Gas Light Co., owned by the Massachusetts Lighting Co., are now on file; cost of this building, with improved machinery and other changes to be made, will aggregate an expenditure of \$100,000 or more.

**Mt. Pleasant, Mich.**—Citizens have voted to grant a franchise to the Chippewa River Power Co.—H. H. Hunter, City Clerk.

**Mt. Pleasant, Mich.**—Council has received an application from the Chippewa River Power Co. for a franchise to erect transmission lines and other apparatus in Mt. Pleasant for the distribution of electricity for lamps, motors, etc., for a term of 30 years.

**Minnesota, Minn.**—Town is considering installation of an electric light plant.

**Rochester, Minn.**—The Public Utility Board will advertise for bids on a Corliss or turbine engine and appliances for the electric light plant.

**Kirksville, Mo.**—The New Hannibal & North Missouri Electric Railway is considering construction of power plants on Salt and Fabius rivers.—E. P. Roberts, Cleveland, O., Chief Engineer.

**Round-Up, Mont.**—James U. Gridley is seeking an electric light plant franchise in this city.

**Camden, N. J.**—The Eastern Light & Fuel Co. has been incorporated to generate electricity for light, heat and power; capital, \$200,000.—W. B. MacDonald, Camden; W. E. Stokes, B. L. Van Schaick, Philadelphia, incorporators.

**Irvington, N. J.**—Bids will be received in September for installation of a municipal lighting plant; also for furnishing town with electric light and gas on a one, three, five and ten-year contract.

**Paterson, N. J.**—John H. Cook, Hydraulic Engineer, has been busily engaged during the past few weeks in preparation of plans and sketches for the proposed electric power generating station at the falls. E. LeB. Grand Gardiner is interested.

**New York, N. Y.**—The Municipal Art Commission has approved designs for lampposts in Central Park, made by Henry Bacon; about 1,400 lampposts will be erected soon, at a cost of \$35,000; the designs for these lampposts were paid for privately by members of the Municipal Art Commission, who serve the city without pay.

**Rochester, N. Y.**—The Rochester Rail & Light Co. will lay about 18 miles of mains, various sizes and lengths, new and extensions, during present season.—Frank Hellen, Superintendent of Gas Distribution Department. Company will also lay about ten miles of conduit, 4, 6, 8 and 12 in. diameter, during present season, on various streets.—T. H. Yawger, Superintendent Electrical Department.

**Grand Forks, N. D.**—Council has approved the plans of Earl D. Jackson, of Chicago, Ill., for an electric light plant.

**Grand Forks, N. D.**—Council has ordered the laying of underground wires and the installation of lamp posts in the erection of the special lighting system on five streets.—E. V. D. Jackson, Engineer; K. C. Hunter, Acting Mayor.

**West Liberty, O.**—Arthur Hartzler has purchased the electric light plant of R. M. Kelly and will make some improvements.

**Ada, Okla.**—The Ada Oil & Gas Co., recently organized here for the purpose of fully testing the oil and gas possibilities of Pontotoc County, has applied to the City Council of this city for an election for the purpose of voting on a gas franchise for the company in this city; election will be held on July 29.

**Granite, Okla.**—City is considering the adoption of plans for electric light plant.

**Magnum, Okla.**—Citizens are considering an \$80,000 bond issue for the construction of a municipal electric light plant.

**Okemah, Okla.**—Plans are being prepared by Engineer M. A. Earl, Muskogee, for an electric light plant.

**Sayre, Okla.**—City will construct electric light plant to cost \$15,000.—W. C. Fisher, Engineer; W. Ben Turner, City Clerk.

**Estacada, Ore.**—The Portland Electric and Transmission Co. has decided to erect a large power plant and sawmill on its site.

**Talent, Ore.**—The Jackson County Light and Power Co. has been organized with a capital of \$10,000.—A. W. Silsby is interested.

**Allentown, Pa.**—County Commissioners have rejected all bids submitted for in-

stalling an electric light and power plant at the County Home, at Wescoville, as too high; engineers' estimate, \$9,900; bids will be again received.

**Stroudsburg, Pa.**—The purchase by New York capitalists of a site for the erection of an immense power plant means the expenditure of nearly \$1,000,000, and this county will have one of the greatest power plants in the eastern section of the United States; property is located on the Big Bushkill and includes the holdings of the East Stroudsburg Power Co., which secured the land with its excellent water power to combat the light and heat power trust of Stroudsburg; new owners will build a dam 125 ft. in height and expect to sell electric power to Philadelphia and New York.

**Easley, S. C.**—City is contemplating construction of electric light system.—J. M. Jameson, Mayor.

**Georgetown, S. C.**—The Georgetown Electric Railway Co. will enlarge present city electric plant so as to furnish power for railway, lights, etc.—H. C. Case, Philadelphia, Pa., is interested.

**Lexington, S. C.**—A Special Committee, S. J. Leaphart, Chairman, has submitted report on construction of electric light plant and water works and has estimated cost at \$15,000.

**Pierre, S. D.**—The Black Hills Traction Co. has applied for water rights on Coxey Lake for a water power development.

**Elizabethton, Tenn.**—The Doe River Lighting and Power Co. will develop water power of 2,000-h.p. capacity; will install water wheels to develop 1,200 h.p. under 70 pounds' pressure, and electrical machinery of same capacity; 8,000 yards concrete work.—J. H. Grayson, Secretary.

**Waco, Tex.**—City has not let contract for constructing an electric light plant.—W. O. McCollum, McLennan County, Auditor.

**Alexandria, Va.**—The Alexandria Electric Co.'s plant has been purchased by a syndicate composed of Baltimore and Washington parties, and extensive enlargements and improvements will be made immediately; plant and franchise was purchased from the owners, composed of a Pennsylvania syndicate, and the new owners have taken charge of the plant.—Thomas C. Coleman, Cockeysville, Md., President.

**Norton, Va.**—The Norton Light and Power Co. will be incorporated to establish electric lighting and power plant.—J. B. Sterrett, Engineer in Charge.

**Rosslyn, Va.**—The Rosslyn Electric and Gas Co., Rosslyn, Alexandria county, has been granted a charter by the State Corporation Commission, with a maximum capital stock of \$50,000, and a minimum capital stock of \$25,000; objects are to operate a gas and electric light plant. The following are named as officers: M. E. Church, President, Falls Church; G. H. Rucker, Vice-president, Rosslyn; T. J. King, Secretary, Georgetown, D. C.

**Ellenburg, Wash.**—Council is considering plans for extensions and improvements to the municipal electric light system, which will include the installation of a 250-h.p. steam engine and a 500-kw. generator.—W. B. Leverich, Manager.

**Seattle, Wash.**—Stone & Webster, Boston, Mass., will secure additional water power and build a new plant to supply power for the Seattle and Everett line.

**Seattle, Wash.**—An ordinance has been passed by the Council authorizing and directing the Board of Public Works to contract for the construction of additions and extensions to the municipal light and power plant.

**Tacoma, Wash.**—H. B. Bylesby & Co., of Chicago, have purchased the Tacoma Gas Light Co. from Deane & Co., of Grand Rapids, Mich.; new company will expend \$500,000 in extensions.

**Bayfield, Wis.**—City is considering plans for extensive improvements to the municipal electric light plant, which will include the installation of a new boiler and changing the system from single-phase, 133-cycle, 1,100-volt, to three-phase, 2,300-volt, 60-cycle; also replacing the present street lighting system with magnetite arc lamps and series tungsten lamps and the installation of a new switchboard.—F. M. Herrick, Jr., Manager.

**Two Rivers, Wis.**—City has estimated cost of installing a 3-phase system power service at the electric light plant at \$24,160.

**Lacombe, Alta., Can.**—The Blindman River Electric Power Co. will construct a transmission line to Red Deer, Alta.—E. J. Tett, Secretary.

**Toronto, Ont., Can.**—City will call for tenders on approximately the following apparatus: Two 1,500-h.p. induction motors, direct connected to turbine pumps; four 1,500-h.p. synchronous motors, with turbine pumps; four 500-h.p. synchronous motors, with turbine pumps; two 500-h.p. induction motors, with turbine pumps; two 300-h.p. induction motors, with turbine pumps; two 225-h.p. synchronous motors, with turbine pumps, together with valves, piping, bed

plates, couplings, switchboards, connecting material; supplies will be for the use of the City Engineer's Department.

**Vancouver, B. C., Can.**—The Western Canada Power Co. has taken over the plant and franchises of the Stav Lake Power Co. and will develop the plant to a capacity of 30,000 h.p. and supply power for lighting and power purposes to cities along the Pacific Coast.

### BIDS RECEIVED AND CONTRACTS AWARDED

**Rifle, Colo.**—The directors of the Rifle Light, Heat & Power Co. have considered the bids for the construction of the proposed power plant and the contract was let to C. W. Fravert; work on the plant will begin at once. Rock for the foundation and poles for the line will be gotten out first while the machinery and water-wheel are being constructed; plant when complete will cost in the neighborhood of \$33,000. The contract calls for its completion by the first of December.

**Columbus, Ga.**—The Columbus R. R. Co., Columbus, Ga., has ordered the Stone & Webster Engineering Corporation, 147 Milk St., Boston, Mass., to carry out reconstruction on the City Mills plant, to provide a station capacity of 600-kw., 2,300-volt, alternating current, and 200-kw. railway direct-current. The work will include replacing of two wheels and installations of a new 2-phase alternator with auxiliaries.

**Savannah, Ga.**—The Savannah Electric Co. has contracted with the Stone & Webster Engineering Corporation, 147 Milk St., Boston, Mass., for the installation of a 1,000-kw. turbine and auxiliaries in the Indian St. station.—M. L. Sperry, Savannah, Manager.

**Highwood, Ill.**—The Chicago & Milwaukee Electric R. R. Co. has let contracts to the General Electric Co., of Schenectady, N. Y., for one 1,500-kw. 25-cycle 600-volt rotary converter, three air-blast 13,200-volt to 430-volt 185-kw. transformers, together with the necessary reactive coils, oil switches and switchboard panels.

**Kankakee, Ill.**—Arrangements are being made by the Kankakee Electric Light Co. for the construction of an electric plant with an output of 300-hp. at its dam in this city; company recently closed a large contract with the Foley-Williams Mfg. Co. to furnish electricity for operating its plant.—J. S. Maltman, Kankakee, Superintendent.

**Indianapolis, Ind.**—Bids were opened by the Board of Public Works for the electric wiring in the new City Hall building under construction. The bids submitted were:

Hatfield Electric Co., \$8,051; F. H. Cheyne Electric Co., \$8,067.30; Sandborn-Marsch Electric Co., \$8,370, and the Arthur Frantzen Co., of Chicago, \$10,000. The bids were forwarded to George M. Brill, Consulting Engineer, Chicago, for recommendation.

March 8 bids were received for the electric wiring and fixtures. At that time the lowest bid submitted was by the Hatfield Electric Co., bidding \$28,095. All bids were rejected at that time as the Hatfield people had failed to file a non-collusion affidavit.

When the new bids were opened it was found the Sandborn-Marsch Electric Co. and the Arthur Frantzen Co. had not filed such affidavits. In the new bids estimates were not submitted for the fixtures. Mayor Bookwalter explained these were left out of the specifications so that greater time could be allowed for preparing designs especially appropriate for the building.

**Delphos, Kan.**—Bids were received June 23 by the City Clerk for constructing a system of water works and an electric light plant and the contract has been awarded to the Squires Electric Construction Co., 614 Wyandotte ave., Kansas City, Mo. Otto gas engines and Fort Wayne electric equipment will be used. Total bid, \$26,941.—The J. S. Worley Co., Kansas City, Mo., Engineers.

**Boston, Mass.**—Bids were received on June 28 for lighting the city's streets, parks and alleys with gas incandescent mantle lamps for five years. The Greater Boston Illuminating Co. will do the work and furnish gas on a basis of 12,000 lamps at a cost of \$236,790 per year as against a cost of \$266,600 for the vertical lamps and \$271,240 for the inverted lamps as bid by the Rising Sun Street Lighting Co.—Guy C. Emerson, Superintendent of Streets.

**Syracuse, N. Y.**—The Board of Contract and Supply awarded to John W. Davin, Jr., the contract for the construction of a conduit to carry Skaneateles water across the southerly section of the city for \$16,668. The other bidders were: Albert Gaffey & John P. Byrnes, \$26,232.50; Samuel Bonn, \$24,439; Clinton Beckwith, \$19,772.50; Coast & International Contracting Co., \$27,015; Lane-Hennessy, \$22,612.50; P. R. Kiley, \$19,207, and Charles T. Hookway, \$19,270.

F. H. Wood, County Purchasing Agent, states that the contract for electric light

feeders and connections for the various buildings at the Onondaga County Home has been awarded to Edw. T. Moore, of Syracuse, at \$4,100.

**Hanover, Pa.**—The Hanover Light, Heat & Power Co. has placed a contract with the General Electric Co., of Schenectady, N. Y., for one 300-kw. motor-generator set, with switchboard panels, arranged to supply the railway service and reversed for supplying 2,200 volts for lighting service.—Robert E. Manley, Manager.

**Bennettsville, S. C.**—City has awarded contract to Harrisburg, Pa., Foundry and Machine Works and General Electric Co., Schenectady, N. Y., for engines and other equipment.

**Galveston, Tex.**—Bids were opened, June 17, by the City Commissioners for equipment for city electric light plant as follows: For furnishing 300 arc lamps, transformers, switchboards, etc., at plant, the General Electric Co. bid \$14,641; making allowance for the old machinery, its bid was \$13,041. The Westinghouse Electric & Mfg. Co. bid \$16,020 on arc lights, etc.; also a separate bid of \$3,050 for generator, switchboard, etc. The Weber-Duller Construction Co. bid \$14,432, \$13,755 and \$12,750, conditioned upon material, for installing generator, engine, etc. The Erie City Iron Works bid for engines and generators \$10,881 and \$11,031, according to apparatus desired. The Lowe Electric Co. bid for engines and generators \$11,697.

**Basic City, Va.**—The contract for the construction of the municipal hydro-electric plant has been awarded to the Morrison Machinery and Supply Co., of Richmond, Va., for \$20,000.—W. M. Page, City Treasurer.

**Richmond, Va.**—Council on July 6 concurred in recommendation of the Electricity Commission in award of contract to A. W. McClay & Co., for concrete foundations, talraces, excavations and similar work in connection with the municipal electric plant, and also adopted all other contracts for this plant, other than the electric machinery, for which new bids will be received until July 21 by E. B. Richardson, Chairman Committee on Electricity.—E. W. Trafford, Chamber of Commerce Eldg., Engineer.

**Port Orchard, Wash.**—The Board of Control has awarded contracts for the construction of the administration building and power plant at the Veterans' Home, at Port Orchard. The contract for the building was awarded to Lance & Peters, Oriental Building, Seattle, for \$28,800, and for the installation of heating plant and construction of power house to the Seattle Heating & Plumbing Co., 902 Post st., for \$22,250.

**Kingston, Ont., Can.**—The contract for reconstruction of the city gas tank and holder has been let to Edward B. Merrill and Lucius E. Allen, of Toronto, Ont., at \$4,300.—H. B. R. Craig, City Engineer.

### FIRE EQUIPMENT

**Globe, Ariz.**—City is considering purchase of a chemical engine.

**Fresno, Cal.**—City has decided to purchase a steamer.

**Sacramento, Cal.**—City will purchase a second size engine, hose wagon and a hook and ladder truck next year.—H. A. Guthrie, Chief.

**Bristol, Conn.**—Town meeting is considering matter of constructing a new fire house; Fire Commissioners have had plans drawn for an up-to-date fire house.

**Middletown, Conn.**—City is considering the purchase of an automobile fire truck.

**Daytona, Fla.**—A fire department will be organized and apparatus purchased.

**Fort Dade, Fla.**—City did not let contract for the construction of a fire station and wagon shed.

**Cuthbert, Ga.**—City is considering an election on bonds for the erection of a fire department headquarters and a City Hall.

**Decatur, Ill.**—Chief Devore has recommended the building of another fire station, equipping it with a combination chemical and hose wagon and five men; also the purchase of 1,000 ft. of 2½-in. rubber-lined hose and 7 more alarm boxes.

**Vincennes, Ind.**—Architects Campbell & Osterage have prepared plans for three hose houses; cost, \$15,000.

**Moville, Ia.**—The Water Committee will purchase another hose cart and 520 feet of hose.

**Covington, Ky.**—City will install a fire alarm system.

**Boston, Mass.**—Council has passed an order submitted by Mayor Hibbard for \$15,000 for a fire station on Lauriat ave.

**Lawrence, Mass.**—Fire Chief Hamilton is urging the installation of a better fire alarm system.

**Lowell, Mass.**—The Oakland Improvement Society is urging the erection of a fire house in the Oakland section of the city.

**New Bedford, Mass.**—The purchase of an auto fire engine at a cost of \$7,500 has been recommended by the Joint Standing Committee on Fire Department, which is urging the necessity for a piece of apparatus of this type.

**Newburyport, Mass.**—The committee appointed to purchase hose will communicate with the firms receiving the orders, and if they are not filled at once the contracts will be void and the necessary hose will be purchased elsewhere; Chief Cutter is urging the establishment of a reel of hose in Ward 6.

**Baroda, Mich.**—Architect J. Schwerdt, St. Joseph, has prepared plans for a fire station.

**Mt. Clemens, Mich.**—Citizens have defeated proposition to issue \$58,000 bonds for erection of engine house and other improvements.

**New Prague, Minn.**—The Fire Chief is urging purchase of 250 ft. of hose and a shut-off nozzle.

**St. Paul, Minn.**—The Board of Fire Commissioners has decided to erect a \$25,000 fire station.

**St. Joseph, Mo.**—City will erect a \$5,000 fire station.—Thomas Shaffer, City Comptroller.

**Elizabeth, N. J.**—City is considering purchase of an automobile fire engine.

**Jersey City, N. J.**—Citizens of the Second Ward are urging purchase of an engine.

**Perth Amboy, N. J.**—City is considering the repair of the home of the Garfield Hose Co.; new hose is also needed.

**Geneva, N. Y.**—The Fire Commissioners, G. F. Licht, President, recommend the purchase of an up-to-date automatic aerial truck.

**Newburgh, N. Y.**—Because they were too high, the bids received for making the addition to the house of Washington Steamer Co. were both rejected, and the plans will have to be modified somewhat and new bids asked for; the appropriation for the addition to the fire house permits of the expenditure of only \$3,500 and both bids were materially in excess of this sum. The bid of James Todd, which was the lower of the two, was \$4,375; that of Whitfield Creveling was \$4,426.

**New York, N. Y.**—The Board of Aldermen has approved ordinance appropriating the sum of \$100,000 for the preparation of detail plans and specifications for a new fire alarm system in the Borough of Manhattan; plans will include the location and character of the ducts required, such subways as the city must build for itself, and also for the entire instrumental equipment and central substations required.

**New York, N. Y.**—The Municipal Art Commission has approved plans for a double engine company building, to cost \$45,000, for East 14th st., north of Kings Highway, Brooklyn; a 3-story engine house, to cost \$25,000, for 160 Carleton ave., Brooklyn, and a 3-story engine house, to cost \$35,000, for 345 5th st., Manhattan.

**Rochester, N. Y.**—The Board of Contract and Supply has returned unopened the bids put in for three Joken fire alarm systems, in order that more bidders may have an opportunity to compete.

**Utica, N. Y.**—The Board of Contract and Supply will receive bids at once for 2,000 ft. of 2½-in. double jacketed rubber-lined hose for No. 8 engine house.

**Findlay, O.**—City Engineer U. K. Stringfeller has prepared plans for a \$9,000 engine house.

**Warren, O.**—Bids for the \$5,000 fire station bonds offered for sale by the Sinking Fund Trustees have been opened. The bids were as follows: Albert Kleybolte, Cincinnati, \$5,175; Seasongood & Mayer, Cincinnati, \$5,263; W. R. Tod & Co., Cincinnati, \$5,203; C. E. Dennison & Co., Cleveland, \$5,240.60; Hayden Miller & Co., Cleveland, \$5,202.50; Barto Scott & Co., Columbus, \$5,227; New First National Bank, Columbus, \$5,207; First National Bank, Garrettsville, \$5,283; Union National Bank, Warren, \$5,205; Second National Bank, Warren, \$5,110; Western Reserve National Bank, Warren, \$5,288.

**Oklahoma City, Okla.**—City has voted \$100,000 for the erection of a new central station, and the acquiring of two substations and increasing equipment.—W. C. Burke, City Engineer.

**Chester, Pa.**—The Finance Committee has decided to report favorably for the consideration of Councils a loan bill borrowing \$600,000 for municipal improvements, \$177,000 of this being set aside for a fire alarm system and sewers and \$423,000 for streets.

**Edge Hill, Pa.**—The Fire Company is considering erection of an engine house.

**Pittsburg, Pa.**—The National Board of Fire Underwriters has recommended the installation of additional fire alarm boxes; also the bettering of the chemical service.

**Scranton, Pa.**—Fire Chief Ferber is urging the purchase of an automobile.

**Austin, Tex.**—The Tenth Ward Fire Co. has voted to purchase the most up-to-date hose wagon in the fire service.

**Fort Worth, Tex.**—City is considering the erection of a \$5,400 fire house in the Ninth Ward.

**Cherrydale, Va.**—The Citizens' Association has organized a fire brigade with Benjamin Dye as Chief; entertainments will be held and the proceeds devoted to the purchase of a fire engine.

**Norfolk, Va.**—The Board of Control has recommended to the City Council the purchase of an up-to-date fire boat, to cost \$100,000.

**Aberdeen, Wash.**—City will erect a \$3,500 house in the southern part of the town.

**Seattle, Wash.**—The Fire and Water Committee of Council has recommended for passage of a bill appropriating \$10,500 for the purchase of one automobile chemical wagon and one combination chemical and hose wagon; bill directs that the purchase shall be made by the Board of Public Works; it is the intention to look over the market closely for the best that can be found in this style of equipment, and if they are found satisfactory that all fire apparatus in the future shall be of the motor type.—Harry Bringhurst, Fire Chief.

**Seattle, Wash.**—The Finance Committee has approved a measure appropriating \$3,750 for the purchase of four lots in River Park addition for a fire station and stable.

**Seattle, Wash.**—City will change specifications for a chemical engine to allow competing bids.

**Piedmont, W. Va.**—City will purchase 500 ft. of additional hose.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**Topeka, Kan.**—On motion of Councilman Fraser, resolution was adopted directing the Mayor to contract with George C. Hale of Kansas City, Mo., for furnishing combination champion chemical engine and all-steel hose wagon with ladders and with the Cornelius Callahan Co., of Boston, Mass., for furnishing three thousand ft. of 2½-in. Adriatic double jacket fire hose for use in the fire department.

#### ELECTRIC RAILWAYS

**Vilonia, Ark.**—J. N. Simpson and G. Bush are considering the building of an electric railway from Conway through Vilonia to Beebe; distance, 14 miles.

**Colfax, Cal.**—W. S. Fletcher, Forest Hill, is considering the construction of an electric railway between this city and Forest Hill for both freight and passenger service.

**Princeton, Cal.**—The Northern Electric Co. is about to begin an extension of its railroad system, and it is expected to within a short time have a line under construction in the Princeton vicinity, to be in operation next Summer, at the latest; rights of way are now being secured.

**San Francisco, Cal.**—City has granted F. D. Stringham a franchise for a railroad over Stockton st.

**San Jose, Cal.**—Articles of incorporation and consolidation of the Peninsular Railroad Co., the San Jose & Los Gatos Interurban Railway Co., which will operate a network of electric lines between this city and San Francisco, has been filed; capital stock of the new concern is \$12,000,000 and the Directors are J. T. Burke, Paul Schoupe, C. B. Seger, P. F. Dunne and F. E. Chapin; total estimated length of the lines to be operated by the new company is 222 miles.

**Yuba City, Cal.**—Work of securing rights-of-way for extension of Northern Electric Railway from Yuba City to Meridian, Colusa, Princeton and Hamilton City is commenced, and Butte City section offers bonus to get the road built on that side of the river; line is to be in operation within one year.

**Hartford, Conn.**—The House of Representatives has passed a bill which incorporates the Attawaugan Street Railway Co., an independent trolley company which is chartered to build a line from Dayville, through Attawaugan, Ballouville and Pineville to Daniels Factory Village, in the edge of the town of Killingly, and also from Attawaugan to Alexander's Lake; new company starts with \$50,000 capital and is permitted to increase its capital stock to \$100,000.

**Washington, D. C.**—An American consul in Latin America furnishes the name of a man who should be addressed in regard to the construction of a proposed railway line there. Address No. 3579, Bureau of Manufactures.

**Panacea, Fla.**—Plans are being considered for the construction of an electric railway from Thomasville to this city; surveys will soon be made.

**Pensacola, Fla.**—Council has received an application from C. E. Dobson, C. C. Goodman and R. O. Hoffman for a franchise to build a street railway on certain streets of Pensacola.

**Savannah, Ga.**—The Savannah Electric Co. is considering the building of an extension of its trolley to White Bluff and Montgomery.

**Burley, Ida.**—W. C. Dickey and others are interested in the building of an electric railway from this town to Albion.

**Kankakee, Ill.**—Council has granted the Chicago-Champaign & Kankakee Interurban Co. a 50-year franchise to construct an interurban railway on Schuyler ave. and River st.

**Yorkville, Ill.**—The Yorkville & Morris Electric Railroad Co., which will build an electric railway from Yorkville to Morris, Ill., via Lisbon, has decided to let construction contracts very soon.—H. G. Palmer, Aurora, Ill., Chief Engineer.

**Evansville, Ind.**—Business Men of Fairfield and Burnt Prairie, Ill., have formulated plans to construct an electric line from Carmi, Ill., to Fairfield by way of Burnt Prairie; George W. Burn, President of the bank at Burnt Prairie, and a number of capitalists from Kansas City are back of the project; it is the intention later to build an extension of the proposed road from Carmi to Mt. Vernon, Ind., where connections will be made with the Evansville & Mt. Vernon traction line.

**Mt. Vernon, Ind.**—Traction officials and engineers have been in Posey county looking over the field with a view of extending the Evansville & Mt. Vernon line from Caborn or Ford to Oliver, Wadesville, Poseyville and thence to New Harmony; stretch would be 18 miles in length and open up traffic between this city and the north part of the county.

**Vincennes, Ind.**—The Board of Works has taken the initial steps, which will no doubt result in the extending of the car line to the South Side, down Main to 15th and on 15th to Willow st.; line will either be built by the Vincennes Traction and Light Co., or that company will be obliged to relinquish its franchise rights to a car line on those streets, and some one of the contemplated interurban lines will be given the opportunity of using those streets; franchise of the Vincennes Traction and Light Co. is such that it gives the company rights over all of the streets of the city, and in order to make its franchise void on certain streets, which may be desired by other companies, the company must be given an order to make use of its franchise rights within a certain time or relinquish its rights.

**Elwood, Iowa.**—The directors of the Clinton, Maquoketa, Cascade, Dubuque interurban have decided to build the road this year.

**Wichita, Kan.**—The Wichita Railroad and Light Co. will build four miles of railway in Wichita.—W. R. Morrison, General Superintendent.

**Hagerstown, Md.**—The Chambersburg, Greencastle & Waynesboro Electric Railway, which connects with the Hagerstown Electric Railway at Shady Grove, will begin this summer the construction of a 12-mile extension from Chambersburg to Shippensburg via Red Bridge, where it is proposed to establish a park; company also has under consideration plans for the building of an extension of the road from Pen-Mar to Blue Ridge Summit via Lake Royer.

**Battle Creek, Mich.**—The Battle Creek, Coldwater & Southern Railway Co. will let contracts this summer for building this railway from Battle Creek southeast to Coldwater, Mich.; distance, 28 miles.

**Ironwood, Mich.**—The Twin City General Electric Co. has decided to extend its line from Ironwood to Bessemer and Wakefield; distance, 15 miles; surveys are made and right-of-way and capital are ready.—E. D. Nelson, President and General Manager.

**Butte, Mont.**—The local street car company will make extensive improvements and extensions to its system this year.

**Jersey City, N. J.**—Merchants of lower Jersey City and particularly the shopping district along Newark ave. are discussing the subject of a trolley line from Grand st. into Newark ave.—A. J. Johnson is interested.

**Millville, N. J.**—Capitalists are considering plans to build an electric railroad by a short route to Port Norris; survey has been made and the work will start at once. The route will be from Millville to Halevile, where it will connect with the West Jersey & Seashore Railroad direct to Port Norris and Bivalve; line will carry both passengers and freight; seven miles of track will be laid.

**New Brunswick, N. J.**—The Public Service will in the near future build a trolley line along the Perth Amboy road to Stelton Lane, down the Stelton Lane to Stelton and thence to South Plainfield; tract has been surveyed.

**Washington, N. J.**—An effort is being made to extend the trolley line from Washington to Belvidere.

**West Orange, N. J.**—Approval has been given by the Road Committee of the Board of Freeholders to a 50-year franchise sought by the Mountain Railway Co. for the proposed extension of its tracks in Northfield ave. between Cable road ave. and Walker road, West Orange; Committee voted to recommend to the Board that the franchise be granted.

**Elmira, N. Y.**—The Town Board of the town of Southport has granted an additional franchise to the Elmira, Corning & Waverly Trolley Line to occupy one mile of the highway south of the city line.

**Tappan, N. Y.**—The Rockland Trolley Co. is considering plans for the construction of an electric railway from this place to Suffern, and from Stony Point to Nyack; length, about 30 miles; cost, \$2,500,000. Following are the officers: B. A. Hegeman, Jr., President; Charles J. Hardy, Secretary; Stafford S. Delano, Treasurer; A. C. Miller, Second Vice-president and General Manager, and W. H. Coverdale, Chief Engineer.

**Columbus, O.**—The Columbus, New Albany & Johnstown Railway Co., of which A. L. Richmond, of Pittsburg, is President, will extend its line immediately from Gahanna, the present terminus, to Johnstown, in Licking county, O.; extended line will connect Columbus and Johnstown by the most direct route.

**Clinton, Okla.**—The Clinton Street Railway Co. and the Clinton Railway Construction Co. have been incorporated by M. L. Holcomb and others, the former to build a line and operate it and the latter to do the actual work; ultimately it may be extended into the country.—M. L. Holcomb, C. W. Goodwin, R. O. Hunt, E. A. Humphrey, C. H. Lamb, E. N. Tittsworth, A. N. Curry and B. M. Littell, all of Clinton, and H. Smith, of Arapahoe, Directors.

**Oklahoma City, Okla.**—The local railway company is planning to build a double track from the present system to the proposed plant of the Morris Packing Co.

**Tulsa, Okla.**—The City Commissioners have granted the Oklahoma Union Traction Co. a franchise to connect Tulsa with Sapulpa and Broken Arrow.

**Tulsa, Okla.**—W. E. Rohde is considering construction of an electric railway from Tulsa to a subdivision; distance, 1½ miles.

**Marshfield, Ore.**—J. M. Blake has petitioned for franchise for electric railroad running on certain streets; also for franchise to operate in North Bend.

**Oakland, Ore.**—The Oakland & Tidewater Ry. Co. has been incorporated to build an electric railway from Oakland to Empire; capital, \$1,000,000; C. A. Pengra, H. D. May and W. W. Purdy, Incorporators.

**Davisville, Pa.**—The Philadelphia Suburban Traction Co. has been formed to build a broad-gauge electric railway from Hatboro, through Davisville, to Southampton; distance, 3½ miles; capital, \$25,000.—W. E. Watts, Williamstown, N. J., President; W. J. Cooley, Philadelphia, Secretary.

**Ellwood City, Pa.**—A company, headed by H. W. Hartman, proposes to build a railway to connect this city and Beaver Falls; distance, 12 miles.

**Mars, Pa.**—The Rochester & Mars Street Railway Co. has applied for a charter; final survey has been completed, right-of-way and franchises have been obtained and construction contracts will be let soon after the charter is issued in July.—J. H. Barrett, President and Chief Engineer; D. R. Torrence, Pittsburgh, Secretary.

**Mifflin, Pa.**—The West Penn Railway Co. has applied to the Township Commissioners for a right-of-way for an electric railway from Dravosburg to Coal Valley.

**Pittsburg, Pa.**—Surveys are being made for the Pittsburg & Suburban Railroad Co.'s proposed line, which will connect Pittsburg and Carnegie, Pa.; distance, 40 miles.—J. Toner Barr, 237 4th ave., Pittsburg, Chief Engineer.

**Southampton, Pa.**—The Philadelphia Suburban Traction Co. will build an electric railway from Southampton, through Davisville and Johnsville, to Hatboro; distance, 3½ miles.—W. E. Watts, Williamstown, N. J., President.

**Florence, S. C.**—P. Austin Willcox, John L. Barringer, William J. Brown and S. S. Ingram have applied for a street railway franchise.

**Nashville, Tenn.**—The Nashville Railway and Light Co. has been granted permission to amend its charter to permit it to make a number of extensions and improvements in and around Nashville; it is proposed to construct lines to connect Goodlettsville, Nolensville, Paradise Ridge, Una, Belle Meade, Old Soldiers' Home, Masonic Widows and Orphans' Home, Franklin, Bordeaux and other places.—Percy Warner, President and Manager.

**Miles, Wash.**—The Big Bend Transit Co. will build an electric line along the Spokane River from Spokane to the Columbia River steamboat landing, above the mouth of the

Spokane River and will use the narrows for a power site.

**Seattle, Wash.**—J. R. McLaughlin and Paul C. Murphy have made application to the County Commissioners for a franchise to construct an electric railway over county roads to Laurelhurst; line will connect with the Seattle Electric lines by way of north and west shores of Union Bay, crossing the canal at 23d ave.

**Berlin, Ont., Can.**—Ratepayers have sanctioned a by-law to provide \$19,000 for double tracking a portion of the line between Berlin and Waterloo.

**Niagara Falls, Ont., Can.**—The Niagara, St. Catharines & Toronto Railway will at once extend its line from Welland to Port Colborne, eight miles.

## BRIDGES

**Williford, Ark.**—The Mammoth Spring Electric Light and Power Co. has decided to build "Williford Bridge" over Spring River.

**Sacramento, Cal.**—That the Southern Pacific Co. will take action soon toward the construction of a new steel drawbridge across the Sacramento River to replace the present one joining Sacramento and Broderick is evident from the request made to the Board of Supervisors for a conference at which time the plans proposed could be gone over by the company and Supervisors; request was in the form of a communication from E. E. Calvin, Vice-President and General Manager of the Company, stating that the plans and estimates for the proposed bridge had been made and that the approval of the Supervisors was wanted; cost about \$1,000,000.

**Hartford, Conn.**—The House has passed a resolution for the building of a bridge across the Connecticut River between the town of Old Lyme and Old Saybrook, at an expense of \$500,000; another resolution was also adopted providing that the Governor appoint a commission to carry on this work.

**Albany, Ga.**—As a part of Dougherty county's good roads campaign, and as an incident to the construction of macadamized roads leading in all directions from Albany, the County Commissioners have resolved to do away with all wooden bridges in the county, replacing them with iron and concrete spans; work will be begun at once.

**Catlin, Ill.**—Bids will be received by the Highway Commissioners of Catlin Township and the Bridge Committee of the Board of Supervisors of Vermilion County July 14, 2 p. m., for furnishing the material and the labor for the construction of the Rocky Ford bridge in Catlin Township.—Frank Payne, Daniel Eldg., Danville, Engineer.

**Valparaiso, Ind.**—County Council will issue \$22,500 bonds for construction of five bridges. Stephen P. Corboy, County Auditor.

**Atchison, Kan.**—City, the Missouri Pacific R. R., St. Louis, Mo., and the Santa Fe R. R., Topeka, are considering construction of a steel viaduct at 7th st., from Utah to Commercial St. C. T. Hawk, City Clerk; S. K. McCrary, City Engineer.

**Horton, Kan.**—Bids will soon be received for construction of fifty concrete culverts.

**Kansas City, Kan.**—Plans will be prepared by Engineer J. M. Lindsay for additions to four steel bridges for Wyandotte County. F. M. Holcomb, County Clerk.

**Topeka, Kan.**—The County Commissioners will be petitioned by farmers from west of the city to rebuild the brick plant bridge, which was destroyed in the 1903 flood and never rebuilt; at present the Commissioners are besieged by residents of Grantville and Oakland, who want the Grantville bridge restored; as it costs about \$20,000 to build a bridge across the Kaw in this county, the Commissioners will put off the building of the brick plant bridge as long as possible.

**Monkton, Md.**—Meredith & Jarrettsville Turnpike Co. will construct reinforced concrete superstructure and repair abutments to bridge over Little Gunpowder Falls on Jarrettsville turnpike.—Dr. Thomas H. Emory, President.

**Lawrence, Mass.**—The County Commissioners are favorable to the erecting of another bridge over the Merrimac below the Duck bridge.

**Sheffield, Mo.**—Engineer James L. Darnell will prepare plans for concrete or stone bridge over Gooseneck Creek at Independence ave.; cost \$5,000.

**Laconia, N. H.**—The Board of Public Works has estimated that it would cost \$2,000 to repair the Church st. bridge; a wooden one could be built for \$7,000, and a concrete one for \$14,000.

**Burlington, N. J.**—Repairs to the Broad st. bridge at Burlington, a structure used by many automobiles running between Philadelphia and New York, have been recommended by a committee of the Burlington

ton County Board of Freeholders and will cost \$650.

**Elizabeth, N. J.**—A \$10,000 increase in the county appropriation for bridges and culverts has been made by the Board of Freeholders on account of the recently discovered necessity for building four new bridges in the county; it has been found that the bridges over the Rahway River at North ave., Cranford, and over the Passaic, at Summit, will have to be rebuilt at a probable cost of \$18,000. The Elm st. and Henry st. bridges in Cranford will also have to be rebuilt.

**Trenton, N. J.**—Street Commissioner William F. Burk has announced that the Pennsylvania Railroad officials had agreed to repair the Olden ave., South Clinton ave. and Greenwood ave. bridges passing over their tracks.

**Lockport, N. Y.**—The New York Central will expend several thousand dollars in building a new bridge over the Erie Canal.

**New York, N. Y.**—The Municipal Art Commission has approved designs for a bascule steel bridge to cost \$120,000 on the line of the Boston Post Road over the Hutchinson River, in The Bronx, also for a structure by the Long Island Railroad Co. for carrying the four tracks of its Maple Grove cut-off over an unnamed street on the property of the Man estate; west of Lefferts ave., in the 2d Ward of Queens, to cost \$20,000.

**Utica, N. Y.**—Citizens have petitioned for the erection of a \$10,000 bridge over the Mohawk River.

**Alliance, Ohio.**—Citizens will vote Aug. 17 on \$7,000 bonds for constructing an overhead bridge at North Lincoln ave. and the Pittsburg, Ft. Wayne & Chicago Railroad.

**Cleveland, O.**—The City Engineer is preparing plans for the construction of a bridge to eliminate the New York, Chicago & St. Louis Railroad grade crossing in East 23d st.; cost \$200,000.

**Lisbon, O.**—Columbian County Board of Commissioners has passed a resolution for the construction of a modern bridge at the Mahlon Crew Farm, in Butler.

**Springfield, O.**—County Surveyor S. Van Bird is preparing plans for a steel bridge, with stone abutments, over the Mad River; also for a 2-span steel bridge, with two concrete abutments and one concrete pier.—J. E. Lowry, Chairman Board Commissioners, Clark County.

**Toledo, O.**—County has awarded \$36,000 bridge bonds to Breed & Harrison, Cincinnati, at a premium of \$921.

**Ardmore, Okla.**—Morgan Township has voted \$40,000 bonds for bridges, culverts and roads.

**Mattox, Okla.**—Bids will be received July 14 by County Commissioners at Durant for constructing the superstructure of a 55-ft. steel bridge over Boise D'Arc Creek.—J. M. Abbott, Chairman.

**Oklahoma City, Okla.**—City and the Oklahoma Street Railway Co. of Chicago, will build a 300-ft. steel bridge across the Canadian River; the Morris Packing Co. of Chicago is also considering erection of a bridge. W. C. Burke, City Engineer.

**Pawhuska, Okla.**—Osage county will vote August 17 on \$325,000 bonds for construction of 88 bridges.

**Ellwood City, Pa.**—A company, headed by H. W. Hartman, proposes to construct a railway to connect this city and Beaver Falls; cost a \$75,000 bridge will be erected.

**Pittsburg, Pa.**—The Bridge Committee of Councils is considering ordinance authorizing the reconstruction of the Beechwood ave. bridge over Forward ave., in Schenley Park; rebuilding of the bridge will cost about \$135,000.

**Slatington, Pa.**—Plans are being prepared by Engineers Robert S. Rathbun, Allentown, and J. Marshall Young, Easton, for the superstructure of a steel bridge, at Slatington, to cost \$35,000, for the Lehigh County Commissioners, Allentown, and the Northampton County Commissioners.

**Anderson, S. C.**—The County Commissioners at Anderson County are considering construction of a bridge across the Savannah River.

**Houston, Tex.**—Harris County will vote August 3 on \$500,000 bonds for bridge and road construction.

**Woodford, Va.**—The Board of Supervisors of Carline County will erect steel or concrete bridge.—Geo. P. Lyon, Woodford, Supervisor.

**Aberdeen, Wash.**—The County Auditor will call for bids for building a bridge over North River.

**Spokane, Wash.**—City has decided to borrow and will soon call for bids on \$500,000 bonds for construction and repair of bridges.

**Deepwater, W. Va.**—The Kanawha & Michigan Railway will construct bridge over Kanawha River at Deepwater.—T. M. Connors, Superintendent, Charleston.

**Petrolea, Ont., Can.**—The Ratepayers have carried a by-law to raise \$4,000 by debentures for the construction of a bridge over the waterway on the flats.

## BIDS RECEIVED AND CONTRACTS AWARDED

**San Pedro, Cal.**—The following bids for the construction of a bridge over the Guadalupe River at the Monterey road were opened June 23: W. L. Gilham & Co., \$4,942; L. M. Scott, \$4,700; J. W. Williams, \$4,500; Glabe Construction Co., \$4,488. The bids of the two lowest bidders were referred to the Committee of the Whole.

**Las Animas, Colo.**—Bids were received June 26 for the construction of the superstructure of a steel bridge over the Las Animas River in Bent county, about three miles from Las Animas. This work consists of furnishing and fabricating the material and erecting a 190-ft. steel riveted span. Bids were received for the furnishing, fabricating and erecting of bridge, complete, or will be received in two parts: (1) for furnishing, fabricating and delivering material at Las Animas, and (2) for hauling and erecting bridge upon piers already constructed. The M. J. Patterson Constructing Co., Colorado Bldg., Denver, was the lowest bidder, at \$6,296.—Charles W. Comstock, State Engineer, Denver.

**Davenport, Ia.**—The contract for reflooring and repaving the government bridge between Davenport and Arsenal Island has been let to the Kettle River Quarries Co., of Minneapolis, at about \$36,000.

**Boonville, Ind.**—The County Commissioners have awarded contracts for seven new steel and two concrete bridges to Henry Eigemann, of Rockport, for \$2,571.50. Four companies bid, and all ran closely together. The companies bidding were the Vincennes Bridge Co., Lafayette Engineering Co., Henry Eigemann and T. B. Duncan, of Indianapolis.

**Mason City, Ia.**—The Advance Construction Co., of Waukesha, Wis., has secured the contract to construct a concrete bridge for about \$17,000.

**Baltimore, Md.**—Contracts for building 20 concrete bridges in the county were awarded by the Highway Commissioners at a total cost of \$7,000. The bridges will cost from \$150 to \$600 each. Fisher & Caroza received the contract for 8 and W. J. Stover for 12.

**Holyoke, Mass.**—The contract for the lumber of the Appleton st. first level canal was awarded to the Merrick Lumber Co. at \$26.50 per 1,000 ft. for spruce and \$29.50 per 1,000 ft. for southern pine.

**Southampton, Mass.**—Bids were opened by the Massachusetts Highway Commission, Boston, for constructing a steel concrete beam bridge on the State highway in the town of Southampton, and contract has been awarded to the S. A. Breglio Construction Co., Springfield, for \$6,670.—Harold Parker, Chairman.

**Duluth, Minn.**—The only bid opened June 10 by Board of Public Works for constructing a concrete bridge over Tischer's Creek was submitted by D. H. Clough, at \$22,318.

**Gallinas, N. M.**—The contract for the erection of an arch concrete bridge, with two 68-ft. spans, a 49-ft. roadway and 8-ft. sidewalks, across the Gallinas River, between this town and city of Las Vegas, N. Mex., has been awarded to the Missouri Valley Bridge and Iron Co., of Leavenworth, Kan. The contract price is \$32,000. The work is to begin within thirty days and the structure is to be completed by November 30.

**Buffalo, N. Y.**—The contract for constructing a reinforced concrete highway bridge on Northland ave. bids opened June 21, has been awarded to Tiffany & Gail, 1010 Mutual Life Bldg., Buffalo, for \$4,250. Bids were received June 21.—F. G. Ward, Commissioner Public Works.

**Long Island City, N. Y.**—There were thirteen bids received for the proposed new Hunter's Point ave. bridge over Dutch Kills Creek and the contract was awarded to the Northeastern Construction Co. of New York City; the amount of the bids ranged from \$100,000 to \$130,000. The bridge will be a Scherzer roller lift structure, with a 36-ft. roadway and two 6-ft. sidewalks. The length of the two leaves will be 90 ft., 45 ft. each. The width of the creek channel is 50 ft. The following were bidders on the contract: North Eastern Construction Co., 225 5th ave., New York, \$94,914; Phoenix Construction Co., 41 Park row, New York, \$105,901; J. H. Gray Co., Broadway and 23d st., New York, \$111,718; Merrill-Ruckgaber Co., 50 Church st., New York, \$114,336; Cooper & Evans Co., 220 Broadway, New York, \$101,007; G. M. McLeod, 31 Nassau st., New York, \$121,184; Snare & Triest, 143 Liberty st., New York, \$102,637; New York and Portchester Contracting Co., \$112,530; E. C. Moore, \$108,289; Charles E. Fraser Co., 315 5th ave., New York, \$97,557; Degnon Realty and Terminal Improvement Co., \$104,518; Henry E. Fox, 81 East 125th st., New York, \$132,898; Haggerty Contracting Co., 2459 Davidson ave., New York, \$104,977.—Commissioner of Bridges J. W. Stevenson.

**Toledo, O.**—According to bids opened by the Board of Public Service, July 1, the proposed new Cherry st. bridge will cost several hundred thousand dollars more than the estimates; with \$525,000 available at this time, not one of the five bids came anywhere near that sum.

The Board of Public Service paid the Osborn Engineering Co., of Cleveland, \$8,000 for plans, estimates and specifications several years ago. That firm put an estimate of cost on the construction of the portion of the bridge for which bids were opened at somewhere near \$525,000, and the Board was chagrined to get a letter from the company revising the estimate and placing the cost at \$860,000 instead of at the \$525,000 several years ago. Dates for the completion of the bridge ready for travel varied from eighteen months to three years. A number of the bidders bid on items only, and it will take some days to compute figures. Alternative bids were asked for, and some did not bid upon the plans as supplied by the service board.

The Foundation Co., of New York, \$897,777, the first half of the bridge to be completed within twelve months after signing the contract, and the second half within six months after the first half is completed. The bid was upon alternate plans.

P. J. Catlin, New York, bid not computed. Bridge to be ready for paving December 1, 1910.

The Pneumatic Caisson Co., of Troy, N. Y., on its own alternative plans, \$777,777, to be completed November 1, 1911. The bid on the original plans will be considerably higher.

The Standard Contracting Co. and the Central Dredging Co., of Cleveland, combined, bridge to be ready for use July 1, 1913, on alternative plans, \$657,218, including the removal of present Cherry st. bridge to temporary site during building of new bridge.

The C. H. Fath & Sons Co., of Cleveland, put in a bid for a steel structure, rather than reinforced concrete. The representative said that his bid for a reinforced concrete structure would run up to about \$813,000.

At least \$200,000 must be added, it is said, to the lowest bid to provide for the construction of the draw span, bids for which were not asked for at this time.

City Solicitor Northup has ruled that the contract cannot be awarded to the lowest bidder under the recent advertisement calling for bids on the structures, because the city has but \$525,000, secured from its bond issue, while the lowest bid is \$777,777.

**Upper Sandusky, O.**—Bids were received June 30 by the Board of County Commissioners for furnishing material and constructing a 140-ft. span steel bridge over the Sandusky River in Pitt Township, known as the Koterman bridge; also separate bids for two stone abutments for the bridge contract for stone work was awarded to William Hughey, of Nevada, O., and for bridge to Home Engineering Co., of Canton, O. Contract for a 150-ft. span has been awarded to the Modern Construction Co. of Fremont, Ohio.—J. N. Traxler, County Auditor.

**Bowertown, Pa.**—The contract to erect a county bridge at Gabblesville was awarded to Willauer & Co. for \$2,414 for the superstructure, \$5 a cu. yd. for concrete and 33c. for excavation.

**Sewickley, Pa.**—Bids were opened July 1, by the Commissioners of Allegheny County, at Pittsburgh, for the construction of a highway bridge of cantilever type across Ohio River at Sewickley as follows:

Superstructure: American Bridge Co. of New York, \$355,000; McClintic Marshall Construction Co., \$397,000; King Bridge Co., \$408,000; Ft. Pitt Bridge Works, Pittsburgh, \$372,400, awarded contract; Pennsylvania Steel Co., \$411,000, and Penn Bridge Co., \$381,180.

Substructure: Contract for substructure awarded to Adam Laidlaw & Co., at the following bid: 4,065 cu. yds. concrete masonry in foundations of piers 1 and 3, \$7,2870 cu. yd. masonry in abutments, pedestals and foundations of pier 4, \$5,6125 cu. yds. stone masonry, backed with concrete, \$8.15; 13,100 lbs. steel dowels, cramps reinforcing, etc., 3c.; 4,700 cu. yds. approach filling, 80c.; 510 sq. yds. brick paving, \$2; 300 tons crushed limestone surfacing, \$2; 310 sq. yds. concrete sidewalk, 80c.; 325 lin. ft. concrete curb, 50c.; total, \$98,907. Totals of other bids: Dravo Construction Co., \$137,843; Morrison Bros. Co., \$145,985; Jerry L. Pohl & Co., \$148,001; Pneumatic Caisson Co., \$151,483, and Drake & Stratton Co., \$142,785.—J. G. Chalfant, County Engineer, Pittsburgh.

**Neenah, Wis.**—The Chicago & North Western Ry. Co. has awarded contract for the construction of three steel and concrete double-tracked bridges, one over Little Lake Butte des Morts and two over the Neenah and the Menasha channels of Fox River, to O'Keefe-Orbison Construction Co., of Appleton, Wis. Solid concrete abutments, steel caisson bases, and 50-ft. steel spans will be used. Cost, \$265,000.

## MISCELLANEOUS

**Greenville, Ala.**—Council has accepted plans and specifications by Willis R. Biggers, Mobile, for proposed \$10,000 Carnegie Library.

**Berkeley, Cal.**—The Improvement Clubs are in favor of a plan whereby a parkland park is to be established between the lines of the Southern Pacific and the Key Route on Shattuck ave.

**Chico, Cal.**—A proposition for the erection of a crematory in Chico for the reduction of garbage has been presented to Council by H. Adams, of San Francisco; he offered to install an incinerator if the city would give him a bonus of \$350 and a franchise to lay gas mains; he would dispose of garbage of all character for 60c. per ton. His plant, he states, will reduce any character of rubbish and he profits from by-products, such as acids, gas, tar, charcoal, wood alcohol and other products.

**San Francisco, Cal.**—A franchise for an underground car line in Stockton st. has been granted by the city to a company, of which A. J. Lowenberg, president of the City and County Bank, is head; the company claims it will bore a tunnel through the Stockton st. hill and thus bring North Beach into direct connection with the business center of the city; estimated cost of the tunnel is \$150,000.

**San Jose, Cal.**—The Park Commission is considering advisability of making a number of needed improvements to the parks.

**Waterbury, Conn.**—The Board of Public Safety will at once order an auto patrol wagon.

**Washington, D. C.**—The District Water Department is preparing to establish six drinking fountains in various sections of the city, each to be supplied with filtered Potomac water; these fountains will be installed for experimental purposes and with a view of ascertaining whether their general use will repay the department for the money required to purchase the fountains and keep them supplied with running water.

**Cuthbert, Ga.**—City is considering an election on bonds for erection of City Hall and Fire Department headquarters.—D. A. McPherson, Mayor.

**Indianapolis, Ind.**—Resolutions have been adopted by the Board of Park Commissioners for the acquisition of land and construction of boulevards and parkways in the south, east and west park districts and also for the acquisition of the Ellenger berbers woods in Irvington for park purposes.

**Washington, Ind.**—Council has agreed to buy from the Washington Commercial Club the tract of ground owned by the club and adjoining the city on the east for the purpose of establishing a public park.

**Des Moines, Ia.**—The Department of Parks has decided to expend about \$15,000 on river front improvement this year.

**Baltimore, Md.**—Shipping men are interested in a move to build city docks in order to provide accommodations for small vessels engaged in bay trade and for the use of independent steamboat companies.

**Boston, Mass.**—Councilman Ducey of Ward 4 has secured the passage of a loan order amounting to \$50,000 for the erection of a new bathhouse at Dewey Beach, Charlestown.

**Boston, Mass.**—The Council concurred with the Aldermen in passing Alderman O'Hare's order of \$5,000 for a playground for women and children at M. N. E. 8th and E. 9th sts., South Boston.

**Mt. Clemens, Mich.**—Five different bonding propositions for sewers, crosswalks, water works, park, engine house and water mains have been defeated; they amounted in all to \$58,000.

**Duluth, Minn.**—Chief of Police C. H. Troyer has been authorized to purchase a motorcycle.

**Montevideo, Minn.**—Architect F. D. Orff, Minneapolis, has prepared plans for a \$20,000 two-story jail and Sheriff's residence for Chippewa County. J. J. Stennes, County Auditor.

**Asbury Park, N. J.**—By a tie vote the proposition to bond the city for \$150,000 for additional beach improvements has been defeated; a new election will be ordered; part of the proposed bond issue was to have been expended for indoor saltwater baths and a swimming pool to be kept open all year.

**Camden, N. J.**—Council has passed an ordinance providing for a bond issue of \$100,000 for the purchase of docks and wharves along the Delaware River and Cooper Creek; offer of a site for a municipal hospital at Ferry and Mt. Ephraim ave., by Lewis B. Humphreys, has been accepted.

**Jersey City, N. J.**—The Street Cleaning Department has asked for an extra appropriation to repair and repaint 26 cars, purchase new brooms and sweepers and to generally overhaul the plant.

**Millville, N. J.**—Council has ordered several new water fountains to be placed along the streets.

**Trenton, N. J.**—The Mercer County Socialists have started a movement for a municipal ice plant for this city; party leaders will circulate petitions which will be submitted to Common Council asking that body to appropriate the necessary money and to establish a plant. Committee is composed of Mr. Henry, Reuben McDermitt, Charles W. Pette, John Phelps Pette, John Richards, William Liversidge, Walter Derbisher and William Hayes.

**Hornell, N. Y.**—Council has voted to accept the offer of Andrew Carnegie to donate \$25,000 toward the construction of a library.

**New York, N. Y.**—The Municipal Art Commission has approved sketches for four pavilions for Bellevue Hospital, to cost \$2,500,000 and intended for the surgical ward and for dormitories for the house staff.

**Rochester, N. Y.**—The Board of Estimate has made provision for fitting up two new playgrounds; sum of \$4,000 which was set aside in the tax levy for the development of the Carter st. playground in the Twenty-second Ward has been turned over to the Park Commission to be used for this purpose; no provision has been made for fitting up the Hartford st. playground, which is located on land belonging to the New York Central; appropriation of \$1,500 has been given to the Park Commission for this ground, to be taken from money raised from other sources than taxation; the two new playgrounds will be fitted up for use in the near future.

**Alliance, O.**—Citizens will vote Aug. 17 on \$120,000 public improvement bonds, including \$40,000 for a new City Hall.

**Columbus, O.**—The preliminary step towards holding a special election to vote on the issuing of from \$50,000 to \$75,000 bonds for park purposes on the West Side will be taken by Council very soon.

**Sandusky, O.**—Plans have been completed by F. C. Doerzbach for a reduction plant.—John J. Molter, President Board of Health.

**Seville, O.**—Litchfield Town Hall \$1,200 repair bonds have been purchased by Savings Deposit Bank Company, of Medina.

**Chester, Pa.**—Mayor D. M. Johnson has recommended the setting aside of a sufficient amount of money in the proposed municipal loan to provide a public swimming pool.

**Philadelphia, Pa.**—Council is considering a resolution authorizing a committee to visit the harbors of New York and Boston for the purpose of securing data to be used in the construction of wharves and docks for the harbor of this city.

**Scranton, Pa.**—Director Charles V. Terwilliger, of the Department of Public Works, is urging the removal of the unsightly stone approach to the City Hall on the Washington ave. side and putting in of a more attractive esplanade.

**Jackson, Tenn.**—Citizens have defeated \$25,000 bond issue for erection of City Hall.

**Waco, Tex.**—An ordinance requiring the Citizens' Street Railway Co. to sprinkle all streets occupied by its lines, and which are now sprinkled by the city, has been passed by the City Commission and will become effective 45 days hence; this will make several miles of additional sprinkling for the railway company and it is understood that it will vigorously protest.

**Waco, Tex.**—Citizens will vote July 14, on \$25,000 bonds for public works.

**Wichita Falls, Tex.**—The \$15,000 bond issue for a new county jail which was voted in May was held to be void by the ruling of the Attorney General by reason of an error in wording the purpose of the bond issue to "build and equip" a county jail; the Attorney General ruled that the law does not provide for counties to "equip" a jail by bond issue and that the money can be legally applied only to "build" a jail; County Commissioners have therefore called another election for Aug. 3, but have increased the amount to \$20,000 for the forthcoming election.

**Two Rivers, Wis.**—All bids opened by the Board of Public Works for constructing a dock on the north side of West Twin River have been rejected and new bids will be called for.—Wm. Luebke, Chairman.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**Jacksonville, Fla.**—City has awarded contract to Dixon Engineering and Construction Co., Toledo, O., for construction of

garbage crematory.

**Boston, Mass.**—Mayor Hibbard has approved the award of the \$73,450 contract to Stephen Brennan for the erection of the second ward building of the Consumptives' Hospital; Mayor also has approved the award of the contract for heating and ventilating the building to J. P. Dyer, whose bid was \$14,000.

**Bloomfield, N. J.**—Bids for the scavenger contract were presented in two forms, for removing ashes and garbage from the rear of houses, and from the front. Amos De Baun, of Bloomfield, was the lowest bidder, agreeing to do the work for \$7,200 and \$3,588, respectively. The other bids received were: Richard J. Maxwell, \$9,830 and \$4,915; William Fornoff, \$10,000 and \$4,500; John

Van Riper, \$9,000 and \$4,900. The award of the contract was deferred.

**Lorain, O.**—Bids were opened recently by the Board of Public Service, for improving Black River, by widening, deepening and straightening the channel of same within said city from the Erie ave. viaduct southerly to the upper end of navigation, and the contract has been awarded to the Great Lakes Dredge & Dock Co., of Cleveland, for about \$10,000.—A. W. Thomas, Clerk.

**Ebensburg, Pa.**—The County Commissioners held a special conference with Architect James K. Boyd, of Johnstown, representing the firm of Boyd & Hall, architects, and opened bids for the erection of the addition to the Cambria County Jail. The successful bidders were Kenyon & Hart, of Clearfield, the contract price being \$24,524 for a brick structure 62x102 ft. and \$25,434 for a stone structure. The other bidders were as follows: P. W. Simms, of Pittsburgh, \$27,039; Orner & Webster, of DuBois, \$28,299; Thiele Construction Co., of Johnstown, \$25,948; John L. Elder, of Ebensburg, \$25,880, with stone, and \$25,450, with brick; C. D. Hughes, of Altoona, \$26,446, with brick, and \$27,796, with stone; J. G. Hartley, of Johnstown, \$25,605, with stone, and \$25,398, with brick. Immediately following the opening of the bids the Commissioners decided to build the addition with brick and awarded the contract to the Clearfield County concern. Work will begin soon.

**Portage, Pa.**—The Commissioners opened bids for the jail addition and found that Kenyon & Hart, of Clearfield, whose bid was \$24,524, were the lowest bidders; the contract will be let in a few days.

**Galveston, Tex.**—At a meeting of the County Commissioners' Court and executive representatives of the five railroads entering Galveston, on July 5, the contract for the construction of the causeway across Galveston Bay was awarded to the A. M. Blodgett Construction Co., of Kansas City, for \$1,222,000 for the concrete and the roadway fill, and to the Penn Bridge Co., of Pennsylvania, for the lift bridge for \$94,400, making a total of \$1,326,400 exclusive of engineers' fees and other contingencies. It is estimated the causeway will cost \$50,000 more than the original estimate of \$1,490,000 and the railroads are to raise \$25,000 and the county and interurban road the other half. Construction will be commenced within a month. The vote for the awarding of the contract was unanimous and there was no protest from Owens and Heffron, of Galveston, the lowest bidders by about \$100,000.

**Richmond, Va.**—City has awarded contract to Decarie Incinerator Co., Minneapolis, Minn., for incinerator plant; capacity, 50 tons; cost, \$39,950.

#### TOO LATE FOR CLASSIFICATION

##### STREET IMPROVEMENTS

**West Lafayette, Ind.**—Bids will be received by the Town Board on July 19, 7:30 p. m. for constructing a 5-ft. cement sidewalk on Sylvia st., from Grant to Vine st.—Charles T. Stallard, Township Clerk.

**Epping, N. H.**—Bids will be received by Highway Department, July 16, 5 p. m., for grading and surfacing portion of the main road, from Portsmouth to Manchester, in this town.—A. W. Dean, State Engineer, Rumford Press Bldg., Concord.

**Jersey City, N. J.**—Bids will be received July 26, 2 p. m., for the improvement of Delaware ave.—G. T. Bouton, Clerk, Street and Water Commissioners.

**Cincinnati, O.**—Bids will be received by the Board of Commissioners of Hamilton County, July 30, noon, for treatment of the Cleves and Warsaw pike, from the double tollgate to east line of Addyston with asphalt oil, Green and Delhi townships.—Stanley Struble, President; Fred Drehs, Clerk.

**Norwood, O.**—Bids will be received by the Board of Public Service July 19, noon, for improving portions of Montgomery ave. and west half of Edwards st.—James A. Stewart, 1112 Traction Bldg., Cincinnati, Engineer; H. D. Armstrong, Clerk.

Bids will be received by the Board of Public Service July 19, noon, for furnishing and delivering, f. o. b., Norwood, 80,000 gals. crude asphaltic oil. James A. Stewart, Engineer, 1112 Traction Bldg., Cincinnati; H. D. Armstrong, Clerk.

**Narberth, Pa.**—Bids will be received by Highway and Sewer Committee of Council, July 17, noon, change of date, for resurfacing about 45,000 sq. yds. and constructing about 9,000 sq. yds. of new macadam roadways.—Albright & Mebus, Engineers, 908 Land Title Bldg., Philadelphia; F. H. Harries, Chairman.

**Terra Alta, W. Va.**—Bids will be received July 15 for paving portions of three streets.—L. George Beerbower, Mayor.

##### BIDS RECEIVED

**Jacksonville, Fla.**—Proposals were received by the Board of Public Works, Philip Prioleau, City Engineer, July 6, for grading and paving, under Ordinance No. J-71, the following streets with vitrified paving blocks of some standard brand. All streets on which prices are given were awarded Georgia Engineering Co. of Augusta at prices stated, complete with curb. All other streets were let to Southern Clay Mfg. Co., of Chattanooga, Tenn., complete, at \$1.16 per yd.

STREET	Feet of Stone Curb	Circular Corner Stones	Square Yards Brick
Myrtle Ave...	6,236	16	10,957—
Phelps St....	1,804	4	3,127—\$1.45
Clay St....	2,298	2	3,830—
Ward St....	630	.....	700—
Florida Ave...	1,966	4	4,369—
Beaver St....	1,400	4	2,020—
Osceola St....	1,660	4	2,933—1.45
Laura St....	3,872	12	6,826—1.41
Eighth St....	6,816	26	15,811—1.43
Ocean St....	980	4	1,740—1.43
Union St....	630	.....	1,050—1.43
May St....	6,020	20	11,566—1.43
Walnut St....	6,644	24	12,272—1.43
Cedar St....	560	4	867—1.45

The bids of the Graves-Matthews Co. were as follows: Myrtle ave., \$1.54; Phelps st., \$1.53; Clay st., \$1.57; Ward st., \$1.65; Florida ave., \$1.50; Beaver st., \$1.60; Osceola st., \$1.56; Laura st., \$1.54; 8th st., \$1.50; Ocean st., \$1.54; Union st., \$1.55; May st., \$1.57; Walnut st., \$1.55; Cedar st., \$1.57.

The Florida Paving and Construction Co., Mutual Construction Co. and the Graves-Matthews Co. were eliminated from a favorable consideration by the board as being higher than the other two bidders.

Immediately after convening, Commissioner Aird moved that contracts be awarded as follows: To the Southern Clay and

Manufacturing Co. for the paving of Clay, Ward, Florida ave., Beaver, and 8th sts., and the Georgia Engineering Co. for the paving of Phelps, Osceola, Laura, Ocean, Union, May, Walnut, and Cedar sts., which motion was unanimously adopted.

The total amount of paving to be laid on the fourteen streets is 78,063 sq. yds. and the Southern Clay and Manufacturing Co. gets 37,687 sq. yds. of the total, and the Georgia Engineering Co. the remaining 40,381 sq. yds.

**New Albany, Ind.**—The Board of Public Works has awarded to the Jefferson County Construction Co. the contract for the improvement of Market Square and for the improvement of Greenaway place. The contract price for the Market Square improvement is \$11.23 per ft., while the price on the Greenaway pl. improvement is \$1.64 per ft. for sidewalks, gutters, curbs and grass plat on either side of the street.

**Plainfield, N. J.**—The Road Committee of the Union County Board of Freeholders, July 9, opened the bids for macadamizing, with a top course of Amiesite, Terrill road from South ave. to Raritan road, a distance of about two miles. The bid of the Weldon Contracting Co., Rahway, \$26,044.27, was the lowest and the contract was awarded to that concern. County Engineer Frank J. Hubbard had charge of the bids, having prepared the specifications under the direction of the Road Committee.

The bids were as follows: Weldon Contracting Co., Rahway, \$26,044.28; Union County Contracting Co., Cranford, \$30,753.90; O'Rourke Bros., Yonkers, N. Y., \$30,082.65; Henry R. Edwards, Yardley, Pa., \$33,882.31.

**Geneseo, N. Y.**—The Geneseo Board of Trustees has awarded the contract for putting down the new cement walks in this village during the present summer, the contract price being 10c. per sq. ft.

**Schenectady, N. Y.**—The F. A. Weed Co. has been awarded the contract for the paving of the Union st. hill with corrugated

concrete. Only the middle of the roadway is to be repaved, the asphalt pavement being left on both sides of the improved strip. The prices varied widely. The Weed Co. secured the job at 8 3/4c. per ft., or \$420 in the aggregate. H. A. Sylvester bid 17 1/2c.; Beckwith Bros., 26 1/2c.; Thomas R. Crane, 23c., and John Koval, 20c.

**Hamilton, O.**—The County Commissioners have passed a resolution to improve the roadway three miles south of the Columbia bridge to the line between Ross and St. Clair townships.

**Hamilton, O.**—The contract for building the cement sidewalks around the courthouse has been let to the firm of F. H. Nichols & Son.

**Altoona, Pa.**—T. Irwin Smith has given the contract to Benjamin F. Davis for the laying of 486 ft. of concrete pavement on Bella and Walnut sts.

**York, Pa.**—The County Commissioners have approved the contracts of Thomas Meehan & Sons, Philadelphia, for the construction of two stretches of good roads in the upper end of the county for \$51,251.91.

**Hoquiam, Wash.**—Keasal Construction Co. has been awarded a contract for 17,000 sq. yds. of brick paving 4 1/8 in. thick, on 6-in. concrete 1:3:6 foundation, sand 2 in., at \$3.04. Also 14,000 sq. yds. sawdust and slabs excavation at 60 cents. The totals of bids were Keasal Construction Company, \$60,080; Kibler & Hall, \$65,750; Aberdeen Construction Company, \$65,050. Same company secured contract for 7,600 lin. ft. of curbing at 40c. Totals of bids were: Keasal Construction Co., \$3,040; Kibler & Hall, \$4,560; Aberdeen Construction Co., \$4,560. Keasal Construction Co. was awarded a contract for 9,000 sq. yds. of cement sidewalk, 1-2-in. thick, on 3 1/2-in. concrete and 1:3:6 foundation at \$1.20. Totals of bids were Keasal Construction Co., \$10,080; Kibler & Hall, \$12,150; Aberdeen Construction Co., \$10,080.—J. D. Mongher, City Engineer.

### SEWERAGE

**Rogers, Ark.**—F. F. Freeman, J. E. Aplegate, and W. C. Chynoweth, Sewer Commissioners, are making arrangements for receiving bids on an estimated \$35,000 sewer extension in this city. Bonds for the cost are to be floated immediately. Dickinson & Watkins, 223 Southern Trust Bldg., Little Rock, Engineers.

**Chicago, Ill.**—Bids will be received, July 15, 1 a. m., for constructing brick and tile pipe sewers in various streets.—John M. Wegen, Vice President; Charles A. V. Standish, Secretary, Board of Local Improvements.

**Joliet, Ill.**—Bids will be received by the Board of Local Improvements, July 19, noon, for the construction of a sewer in Pleasant st.—William S. Welch, Clerk.

**Storm Lake, Ia.**—Bids will be received by the Board of Supervisors of Buena Vista County, July 15, 1 p. m., for constructing tile drains in drainage district No. 14.—H. J. Lichtenberg, Chairman; O. L. Hesla, County Auditor.

**Kansas City, Mo.**—Bids will soon be received for constructing a vitrified pipe sewer on Grand ave., from 9th to 20th st.; cost, \$10,000.—J. L. Darnell, County Engineer; S. J. Armstrong, Secretary, Board of Public Works.

**Jersey City, N. J.**—Bids will be received July 26, 2 p. m., for the construction of sewers in Glechrist st.—G. T. Bouton, Clerk, Street and Water Commissioners.

**Trenton, N. J.**—Bids will be received July 20, 8 p. m., for the construction of a sewer in Virginia ave. and Liberty sts., in Jersey st., and in Ashmore ave.—H. B. Salter, City Clerk.

### BIDS RECEIVED

**Pasadena, Cal.**—E. Schilling has been awarded a contract for sewer on Sunset ave. and other streets; also sewer on Los Robles ave. and other streets for \$6,360.—Heman Dyer, City Clerk.

**Brookline, Mass.**—The following proposals have been opened for the construction of a sewer in Tappan st. from the Metropolitan sewer to Gorham ave.: E. F. Brigham, \$3,105.50; Dennis Driscoll, \$2,055; T. J. Kelley, \$1,829; M. J. O'Hearn, \$1,695; James Driscoll & Son, \$1,550.75. Contract was awarded to James Driscoll & Son, the lowest bidders, in accordance with their proposal.

**Cleveland, O.**—The contract for the construction of the portion of the intercepting sewer between Marquette st. N. E., and E. 61st st., has been awarded to William Lehman by the Board of Public Service. The work will cost \$47,168. Lehman was the low bidder on the contract.

**Salt Lake City, Utah.**—The Davis & Heuser Construction Co. has been awarded contract for construction of sewer extension No. 218, at a total bid of \$885.52. Bid on 661 ft. of vitrified pipe, including 1/2-in. per lin. ft., was 30c; on 563 cu. yds. excavation, \$1; 1 manhole, \$40, and 1 flush tank, \$85; other bidders were H. G. Gilker, \$926.97, and J. D. Hanley, \$932.15.

### WATER SUPPLY

**Joliet, Ill.**—Bids will be received by the Board of Local Improvement, July 19, 10 a. m., for the construction of a water main in Pleasant st.—Wm. S. Welch, Clerk.

**Franklin, Minn.**—Bids will be received by the Village Council, July 15, 8 p. m., for the construction of a steel water tower.—A. U. Hannum, Village Secretary.

**Luth, Minn.**—Bids will be received by the Village Council, July 15, 8 p. m., for laying 10 blocks of water main; also for constructing 2,926 lin. ft., more or less, of 6-in. sewer pipe, eight manholes and four flush tanks.—E. F. Johnson, Virginia, Minn., Engineer; M. A. Nichols, Village Secretary.

### BIDS RECEIVED

**Jacksonville, Fla.**—Bids for constructing the reinforced concrete pump house for the new fire protection system at the foot of Newman st. were opened by the Board of Bond Trustees, July 7. The bids for the pump house, which is to cover and protect the two big electric pumps, were as follows: D. C. Miller, \$4,873; Woodcock, \$5,898; C. E. Griffing Co., \$6,371.26, and A. J. Caesary Co., \$4,980. Another bid was opened, but a technical variation from the call caused it to be put aside. The check inclosed was not certified and the board decided that it was not a good precedent to depart from the rule in such cases. The four bids read were referred to the water committee with power to act.

**Carthage, Mo.**—The Board of Public Works let the contract July 2 for the big pumping machines, each an engine and a pump combined, for the municipal water works plant to the Platt Iron Works, of Dayton, O. The company was represented by E. J. Merkle, whose bid was \$17,400 for the two big engines, complete, delivered in Carthage and installed.

Each of these pumping engines is of 3,000,000 gallons capacity for each 24 hours, with reserved force capable of delivering water at the rate of 4,000,000 gallons every 24 hours for fraction of a day when extra fire pressure is needed. This will give the power plant great capacity.

Only one pump at a time will be needed. The other pump will be held in reserve for use when unusual pressure and supply is needed in an emergency, and to use in case the operating pump should become temporarily disabled.

The pumping engines will alternate as reserve pumps, which will insure each being in full working order all the time; price is less than the board's estimate of the probable cost. This company also filed a bid of \$15,900 for two pumping engines of the "extended" type of pump, but the board accepted the firm's higher bid for the "opposed" type of pump. The latter has a larger and more powerful engine, and is supposed to be a better type. The lesser of the two bids made by this company was the lowest bid made for pumps up to the specifications.

Eleven bids were filed and these were made by nine bidders, the bids ranging in amount from \$15,400 to \$25,250, but the lowest bids were for pumps not up to the specifications, and so could not be considered.

The nine firms which were bidders were as follows: The Platt Iron Works of Dayton, O.; Laidlow, Dunn & Gordon, of Cincinnati, O.; the Prescott Pump Co., of Milwaukee, Wis.; the Allis-Chalmers Co., of Milwaukee, Wis.; the Norburg Mfg. Co., of Milwaukee, Wis.; the Brown Corliss Engine Works, of Corliss, Wis.; the Canton-Hughes Pump Co., of Canton, O.; the H. N. Strait Mfg. Co., of Kansas City, Kan.; the Murray Iron Works, of Burlington, Ia.

### ELECTRIC RAILWAYS

**Youngstown, O.**—Illuminated signs designating the destination of street cars are being experimented on by G. J. A. Paul, superintendent of transportation of the Mahoning & Shenango Railway and Light Co.; signs are a box light, with the name of the car painted white, or showing white through a glass painted black; signs are placed in the top of the front vestibule at the right side and are easily read.

### BRIDGES

**Augusta, Me.**—Bids will be received by the Commissioners of Kennebec and Somerset Counties, at Court House, July 27, noon, for constructing the masonry for a bridge over the Kennebec River, at Hinckley, between the towns of Fairfield and Clinton.—E. E. Greenwood, Skowhegan.

**Byesville, O.**—Bids will be received by the Board of Commissioners of Guernsey County, Cambridge, July 20, 11 a. m., for constructing an iron or steel bridge to span Wills Creek, at foot of 10th st.—Dan R. Wallace, County Auditor.

**Findlay, O.**—Bids will be received, July 30, noon, for the construction and completion of

a reinforced concrete bridge across the Philip Heldman ditch, on township line, between Eagle and Van Buren townships.—John A. Sutton, Auditor, Hancock County.

**Fairmont, W. Va.**—Bids will be received by the Consolidation Coal Co. until July 17 for concrete piers for bridge over Big Sandy River.

### BIDS RECEIVED

**Washington, Pa.**—The County Commissioners have let the contract for the construction of the five bridges in various parts of the county to the Penn Bridge Co. at Beaver Falls. The total cost of construction, not including the masonry work, will be \$9,617.60; other bidders and their bids were:

McClintock-Marshall Construction Co., Pittsburgh, Cherry Valley, \$1,800; Van Emans, \$4,000; Smith, \$1,600; Wilson, \$2,070; Maple Creek, \$2,030.

Climax Road Machine Co., Wilson, \$2,479; Smith, \$1,970; Cherry Run, \$2,180; VanEmans, \$4,205; Maple Creek, \$2,419.

American Bridge Co., Wilson, \$1,760; Smith, \$1,430; Cherry Valley, \$1,572; Maple Creek, \$1,765; VanEman, \$3,110.

Fort Pitt Bridge Works, VanEman, \$3,294; Maple Creek, \$2,185; Wilson, \$2,067; Smith, \$1,630; Cherry Valley, \$1,975.

Nelson-Meredith Construction Co., VanEman, \$3,640; Maple, \$2,349; Wilson, \$2,149; Smith, \$1,800; Cherry Valley, \$2,010.

Canton Bridge Co., VanEman, \$3,453; Smith, \$1,689; Maple Creek, \$2,079; Wilson, \$2,195; Cherry Valley, \$1,908.

York Bridge Co., VanEman, \$3,335; Wilson, \$2,190; Maple Creek, \$2,290; Smith, \$1,770; Cherry Valley, \$1,960.

Riverside Bridge Co., VanEman, \$3,132; Smith, \$1,560; Maple Creek, \$1,970; Wilson, \$1,922; Cherry Valley, \$1,760.

Penn Bridge Co., VanEman, \$3,173.83; Wilson, \$1,857.60; Maple Creek, \$1,817.30; Smith, \$1,425.93; Cherry Valley, \$1,618.

**Kaukauna, Wis.**—The Weirauch bridge across Little Apple Creek in this town was let on bids being received from four of the leading contractors in the vicinity by the members of the Town Board of Kaukauna and the chairman of the County Bridge and Road Committee.

Weyenberg & Garvey, contractors, secured the job of construction at \$900.65, the rest of the bids were in various amounts above this, running up to \$1,000,000, the highest.

The structure is to be of steel girders with a roadway of concrete steel reinforced.

### MISCELLANEOUS

#### BIDS RECEIVED

**Washington, D. C.**—Contracts for supplies aggregating in value more than \$500,000 have been awarded by the Isthmian Canal Commission. They include those to the United Engineering and Foundry Co., of Pittsburgh, for structural material, at \$574,807, and the Rosedale Foundry and Machine Co., of Pittsburgh, \$84,600 for valves.

### INCORPORATIONS

**Automatic Meter Guard Co.**, Chicago, Ill.; manufacture water meters; capital \$100,000. Incorporators: Augustus F. Hintze, Wm. F. Freudeneich, W. H. Chamberlin, Chamberlin & Freudeneich, 1545 Marquette Bldg., Chicago.

**Berrigan Contracting Co.**, Little Falls, N. Y.; construction and contracting; capital \$5,000. Incorporators: Bertram F. Adams, Harry L. Becker, William J. Berrigan, all of Little Falls, N. Y.

**Gabriel Bros. Construction Co.**, New York, N. Y.; construct sewers, fireproof floors, etc.; capital \$12,000. Incorporators: Gustavus L. Gabriel, 135 Broadway; Bruno Gabriel, 1509 Seventh ave.; Bernard L. Gabriel, 1809 Seventh ave., all of New York.

**Greater Boston Illuminating Co.**, Boston, Mass.; manufacturing and sale of gas lamps; capital \$375,000. President, William A. Rumpf, 10 Will street; Treasurer and Clerk, Henry F. Merriam, 11½ Wellington street, both of Boston.

**The International Stoker Co.**, Wilmington, Del.; capital \$200,000. Incorporators: E. L. Squire, G. W. Dorsey, Jr., and Louis Rothstein, all of Wilmington, Del.

**Oakland Dock and Terminal Co.**, Oakland, Cal.; capital \$5,000,000. Incorporators: E. A. Heron, George E. Pratt, F. C. Havens, F. M. Smith, Stanley J. Smith, Dennis Searles and C. P. Murdock.

**The Ouachita Power Co.**, Little Rock, Ark.; capital, \$50,000; to build a water power-electric plant on the Ouachita River in Garland county, Ark. Incorporators: Levi Storthz, President; Joe Storthz, Vice-president, and D. L. Phillips, Secretary.

**Rider & Starr Sewage Disposal and Construction Co.**, Mount Vernon, N. Y.; to gather and dispose of garbage; capital \$50,000. Incorporators: Oliver F. Starr, T. C. Rider, Edward A. Robinson, Mt. Vernon.